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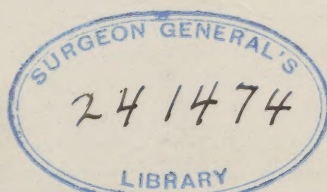
Represents the Medical Profession of
Minnesota, North Dakota, South Dakota, and Montana
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MINNEAPOLIS, JANUARY 1, 1920

No. 1

SOME EFFECTS PRODUCED BY THE GRIPPE*

BY W. A. EVANS, M. D.

CHICAGO, ILLINOIS

Mr. President, Members of the North Dakota State Medical Association, Ladies and Gentlemen:

I am sorry I did not have the pleasure of meeting with you last evening and of participating in the formation of a State Health Society in North Dakota. I was anxious to come to your city because I had never had the privilege of meeting with the organized profession of your state, though I have had the privilege of contact during their school days with many of the men who constitute your membership. I have been teaching medicine for twenty-eight years in the location from which have come a great many of the practitioners in the State of North Dakota. In consequence, not from any virtue on my part, but on account of being happily situated, it has been my pleasure to be in close contact with many of your members. One of the objects of my coming was to ask the people here to organize a State Health Society in close association with the State Medical Association, to be composed of people interested in the prevention of preventable diseases. Not only members of the medical profession are so interested, but persons who are not members of that profession. State health societies are being organized in every state in the Union.

With this I will leave this subject, with the request that your President during the next hour appoint a small committee who will retire to

another room where I may talk the matter over with them. This in recognition of the fact that your program is very crowded and that you have other papers which you would like to hear.

* * * *

I am here today to talk to you about the influenza epidemic. We have had many epidemics of influenza in the history of medicine. There was one authenticated epidemic prior to the birth of Christ, but since 1170 there have been many. Some people count as many as one hundred, and others twenty-five or thirty. Why the difference? No epidemic has terminated in a single year. Each epidemic has trailed through a series of years, and many times it has been difficult to decide whether the epidemic was a new one or a continuation of an old one. Some claim that there have been one hundred epidemics in the last eight hundred years, and others say about thirty, and still others that there has been about one epidemic to every generation.

In this country there have been epidemics in the following years: 1627, 1729, 1759, 1761, 1815, 1826, 1843, 1867, 1873, 1890, and 1918. We have had about one epidemic in a generation. Now, in spite of the terrible experiences through which civilized and uncivilized men have gone, during these terrible experiences we have never learned anything from any of them, except perhaps those of 1890 and 1918. I submit that we shall never learn to prevent influenza, and never learn to cure the disease unless we continue to study it after the epidemic has ended.

We have been too prone to drop the subject,

*Read by invitation at the Thirty-second Annual Meeting of the North Dakota State Medical Association, at Grand Forks, June 24 and 25, 1919.

We are indebted to The American Journal of Public Health for permission to use the illustrations in this paper, and for the loan of the plates.

and all too ready to forget, as quickly as possible, the terrible experiences we have been through. I think that is responsible for the fact that experiences during the many epidemics had taught us nothing, and we found ourselves just as helpless in 1918 as were our forefathers.

This epidemic started in Naples, then went to Spain, and then to France. It is difficult to say just when it started since it was of a mild type from March until June. In the bulletin which the United States Public Health Service issued last summer it was called "three-day fever." In June, 1918, there first appeared the hemorrhagic type. The third wave which swept over France

means that we shall probably have other waves this winter and for succeeding years; therefore I urge that you do not stop considering, and reading, and studying influenza.

There is another reason why you should study this disease, and that is that it has been most far-reaching in its effects. Even though the disease should cease to sweep over the country in epidemic waves, we have reason to believe that it will profoundly influence conditions in all sections of the country for at least a quarter of a century.

I am going to try to prove to you that for the next quarter of a century the practice of medicine

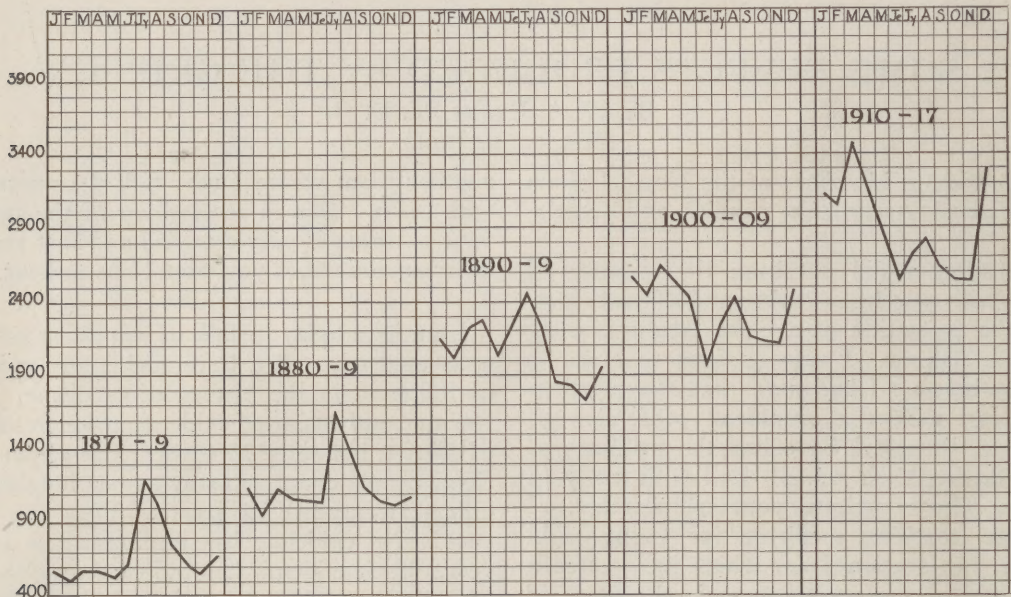


CHART I.

Distribution of total deaths by months (averages for each decade) 1871 to 1917, inclusive.

in September was distinguished by albuminuria. I am informed that the worst of all the waves was that which swept over France in March of this year (1918). There were four different waves that swept over Europe, and, I am informed, there have been three in this part of the country.

The 1890 epidemic began in January, and persisted until May; it recurred in March, 1891, and for nine weeks in March and April, 1891, the death-rate was 25 per cent higher than during the worst week in 1890.

It again recurred in 1892 and also in 1893, conditions becoming normal in 1894.

We have no reason to think that this epidemic will act differently from other epidemics, which

will not be the same as it was prior to this epidemic. I am arguing this on the experiences of 1890 and what came afterwards.

This is my argument: Chart I represents the deaths by months in Chicago for the last fifty years, by ten-year periods. You will notice that in the seventies there was very little sickness in the spring. There was much in the summer. I am sure Dr. Rowe remembers that in those years the doctors were busy in the summer.

This (indicating) is the curve of sickness and death in the eighties; July and August were sickly months. There is beginning to be a considerable rise in the spring curve. In the nineties there is still the July and August rise, but it is not so pronounced as it used to be in the old days;

the spring rise is more pronounced. In the nineteen hundreds there was something of a July and August rise, but the spring, or March and April, rise was much in evidence.

As bearing on the same point, here (Chart II) we divided the yearly deaths into winter-spring and summer-autumn. In the seventies we find that the summer rate was considerably higher than the winter. In the eighties the summer rate is still higher, but not much higher. In 1882 the winter was higher than the summer; nevertheless, for the ten-year period the summer rate was much higher.

In the nineties you will notice that the winter rate is above the summer. In 1900-9 you will notice that the winter rate is above the summer and in 1910-17 the winter rate is far the higher. The death-rate was higher in the summer than

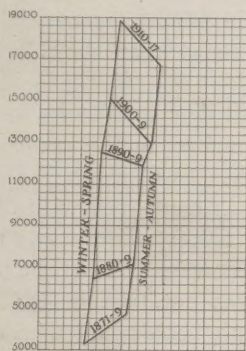


CHART II.

Average number of deaths each year of decade by season—winter-spring and summer-autumn.

in the winter until the great epidemic of 1890; since then the winter rate has been the higher.

Within the last thirty years there has been a radical change in the seasonal distribution of disease. Doctors are busier now in the winter, whereas they were formerly busier in the summer; and the largest factor in the change in this distribution of disease was the epidemic of 1890.

The next charts show the reason and demonstrate that certain infections were influenced by the epidemic of 1890. This line (indicating) (Chart III) represents the total death-rate for fifty years in Chicago by decades. It has fallen rather steadily. This rate is not much more than a third what it was fifty years ago. Here is the typhoid curve by decades. It was high in the seventies, higher in the eighties—note the great reduction. We have practically no typhoid fever.

Note the infant-mortality curve. Notice how it has steadily come down. Now, you say, the change in seasonal distribution is due to the

change in summer diseases. Of course it is in great part due to that, but that is not the only reason. Here are two winter diseases,—scarlet fever and diphtheria. Note how the curves have

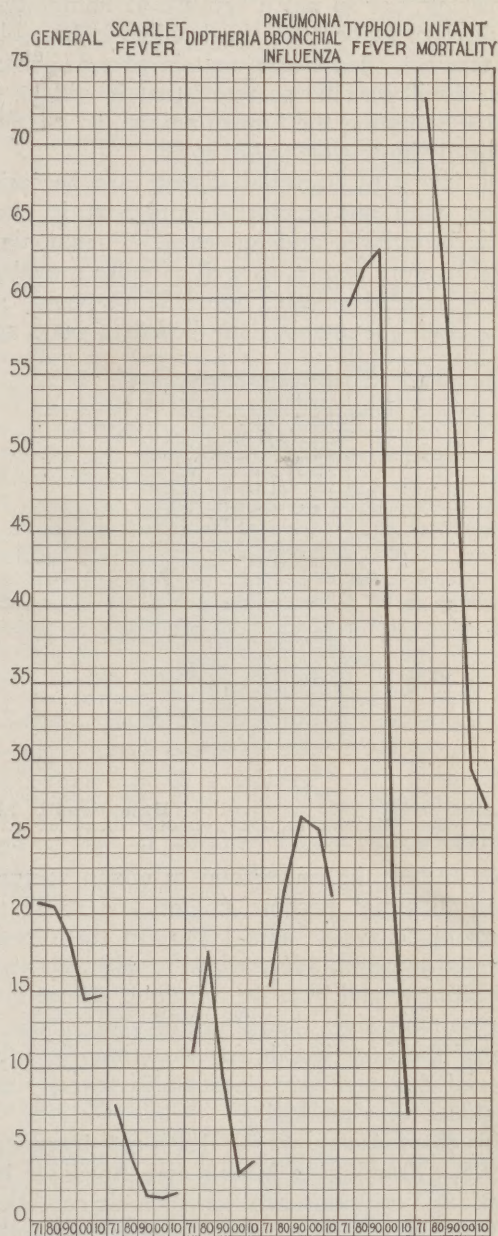


CHART III

Curves of death rates for certain diseases. Averages by ten-year periods, 1871-1917.

dropped. The fact is that there has been a decrease in the death-rates from all forms of bacterial disease in the last fifty years, with one exception. We do not have old-fashioned diphtheria, old-fashioned typhoid fever, or old-fash-

ioned scarlet fever, nor any of the old-fashioned diseases. All the men who have been practicing medicine for thirty years will recognize that as a fact. Karl Pearson claims that tuberculosis is decreasing, not so much because of immunity to the disease, as because the bacillus is becoming less virulent. He claims that in several generations it will become so weak that it will be incapable of killing the human animal, as it is now practically impossible to kill cows.

All forms of bacterial disease are becoming milder, with one exception, and that is pneumonia, bronchitis, and influenza. Pneumonia is probably more severe, as well as more prevalent, than it was fifty years ago. More people are dying from pneumonia than died fifty years ago.

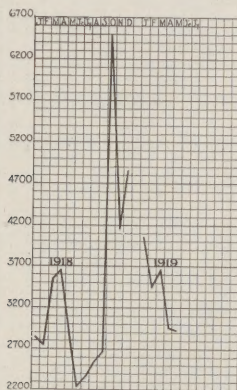


CHART V

Deaths in 1918-1919 by months. Exceptionally high spring rise. Deaths in 1919 exceed those of same months in 1918.

It constitutes the one group in which bacterial disease has not become milder. Here is the pneumonia curve (Chart III). In the nineties it was at its peak. Here we were fifty years ago (indicating), and here we are now. Pneumonia destroys more lives than it did fifty years ago, in spite of the fact that during that time the other bacterial diseases have declined in severity and prevalence very markedly.

This chart also shows the death-rate by months in 1918. Starting in March and April we had something very similar to the epidemic conditions of October. Hetherington and many other capable men claim that there were waves sweeping over the country prior to that of October.

You may think you are out of the woods, but, if you will analyze the situation, you will see that you are still under the spell of influenza. Here are January, February, March, April, and May, 1919, compared with the same months of 1918. In spite of the fact that the death-rate

of 1918 was very high, the deaths every month in 1919, with the exception of April, have been more numerous than in the corresponding month in 1918. Conditions are not as bad as they were in October, 1918; at the same time they are not normal, and they will not be for a number of years.

The bacteria part of the diseases that infect the respiratory system and cause what are known as the acute respiratory diseases, has undergone a change in the last thirty years. It underwent a very marked change in 1890. Infection by pneumococcus and streptococcus of the upper respiratory tract is an entirely different proposition from the same infection prior to 1890.

I believe we have evidence that the influenza of 1890 changed the hosts that were then infected with the disease. The people who had influenza in 1890 have never been the same since, in the sense that they have since been immune to influenza. In the epidemic of 1890 children did not die; the deaths in that epidemic were like the deaths in the present one, among the older people. In Chicago in 1918 there were 44,000 deaths, as compared with 38,000 in 1917, an increase of 6,000. There was no increase in deaths among people over fifty years of age in 1918. That was not true in 1890. The curve for that epidemic shows that men over fifty suffered heavily. Old people died with the disease in 1890, but they did not last year. I think there is a good deal to make us think that the immunity established in 1890 lasted through twenty-eight years. You say that you know of persons who have had two or three attacks of influenza—how do you make your diagnosis? Would not some of those attacks in other years have been called ordinary colds, ordinary coryza, ordinary bronchitis?

We are interested in knowing what will be the after-effects of the influenza epidemic. The only reports that have come to my hands which seem to be of value are those from a study made in the City of Buffalo by the Health Department, and one made by the Metropolitan Life Insurance Company.

The study made in Buffalo shows that very few of the persons who had influenza had any after-effects. Of some 32,000 who were reported to the Health Department only about 700 claimed to have an after-effect at the time of an investigation made in the spring of 1919. This is a

low rate of secondary effects for an infection as violent as influenza. The Department was not certain that they could trace any tuberculosis to a previous attack of influenza.

I suggest that those of you who are interested write to the United States Public Health Service for their influenza survey of Maryland, and to the Health Department at Buffalo for their report on the after-effects of influenza.

DISCUSSION

DR. F. W. MACMANUS (Williston): In 1889 I had been reading of influenza, or Russian la Grippe, as we called it then, and I thought that I knew something about it. After I had sustained a siege of it in December, 1889, I thought that I knew all there was to be known concerning it. In 1893, after considerable more study and experience, I began to waver, and after listening to Dr. Evans' paper I am thoroughly convinced that I never did know anything about it. Dr. Evans has also taken the wind out of my sails in saying that the after-effects of influenza are negligible, leaving me not a leg to stand on. I have now arrived at very much the same mental condition as a certain set of gentlemen at Bismarck. They talk, and I am going to differ with Dr. Evans just for the sake of having something to say. When a man discusses a subject he is supposed to know something about it. I have admitted my deficiency in knowledge of this subject, but am going to discuss it anyway.

Dr. Evans says there are no after-effects of influenza. Dr. Trainor and I have trained together somewhat during the present epidemic, and have come to the conclusion that the sinuses were affected in about 5 per cent of all cases. I have seen one case of infection of the frontal sinus, and three abscesses of the antrum of Highmore, all of which we considered were due directly to infection by the influenzal bacilli, either that or some of the other coccic bacilli that go to make up influenza. We have also seen cases that came to us with bad stomachs—indigestion—whose stomachs would retain nothing,—very small amounts of water being rejected. We considered that these were part of after-effects of influenza and treated them accordingly, giving them from 2 to 5 c. c. of antigen, repeated every three to five days. These cases almost invariably cleared up in a very few days. Some patients recovered by giving the stomach as perfect rest as possible, living in the open with more or less attention to diet.

We have also had people come to us with bowel trouble, which usually consisted of diarrhea or diarrhea alternating with constipation. This diarrhea was of a peculiar order or nature. It was ordinarily of a frothy nature, accompanied by a great degree of tenesmus, was extremely weakening, nearly always leaving the patient in mental depression. Nearly always, following the discharge of the frothy stools, there would follow a large amount of mucus mixed with blood. Once I thought that I detected the amebæ in the stool. Now, I do not know.

Other patients would come complaining of general weakness and dizziness. We attributed this condition to a weakening heart-muscle, and would proceed to build up the general muscular system by furnishing

antigen to the blood, either by means of the Rosenow antigen or the vaccines of Parke, Davis & Company, or of the H. K. Mulford Company, all of which gave us very gratifying results.

A great number of patients came suffering from bronchitis,—those who had not had pneumonia, as well as those who had. Great numbers of children under five years and some over, had bronchitis, and some of the cases developed into bronchopneumonia later—months after the original attack. A large percentage of these patients died.

We have seen many glandular troubles follow influenza, which we attributed to that disease. In our small hospital we have seen glands removed which were not tubercular, but contained the staphylococcus, streptococcus, pneumococcus, Pfeiffer bacillus, and other bacilli. We had one case a few days ago of an abscess formation in the parotid gland in a small child, which we considered one of the after-effects of influenza, although it may have become infected through a diseased tonsil. Dr. Trainor dissected out the sac. Examination disclosed nothing beyond the usual findings. We have also had several cases of mastoiditis following influenza, but which of course may not have been due to that disease.

I would like to say one word in regard to the prophylaxis of pneumonia in influenza. Last fall when the epidemic opened, in September, we had no serum in our town to counteract it,—that is, not enough to mention. I believe that not many of us knew anything of the action of antigen, any more than I do now, but we thought we did. We used what we had, and waited for more. In the meantime I examined the urine of thirty patients, finding albumin in every one. I came to the conclusion that all of them were albuminous, and did no more urinalyses on account of the lack of time. While away at Camp it seemed that things had changed. I returned in the winter, and began doing a few more urinalyses, but not in a single instance did I detect the slightest trace of albumin. I have not found a satisfactory reason for this change.

During the early part of the epidemic, we used the vaccine in all but four of the cases which came under our care, not one of which contracted pneumonia. From December 6 to February 1, we vaccinated 417 persons, four of whom afterwards had pneumonia, three had empyema, and one died.

We noticed that those children who had severe epistaxis did not contract pneumonia, as well as those of older years who had free hemorrhage from the lungs. Also we noted that the women who had severe menorrhagia did not contract pneumonia, and that 75 per cent or more of the women menstruated out of date.

Considering all these things, we have often wondered if nature was not trying to show us the way to prevent pneumonia. Outside of the use of the antigens, phlebotomy was the treatment indicated and would have averted disastrous results in certain cases.

DR. EVANS (closing): Dr. MacManus misinterpreted what I said about no after-effects. The Buffalo report says that about 2.25 per cent of the influenza patients had after-effects. I do not believe there were after-effects in so large a percentage as that. The general opinion is that the after-effects are much more frequent than that. We cannot have any severe clinical infection without having after-effects. Certainly, 30,000

people could not go through such a severe infection as influenza and come out of it without any after-effects. The point I was making was that the fear of after-effects was not substantiated by the Buffalo investigation. We do find some, but the percentage is low.

We all remember how influenza changed last fall,—beginning as a hemorrhagic disease, with nose bleed and bleeding from the bowels, and pneumonia at the peak, that is, if the patient lived long enough to develop pneumonia. Then empyema came. The disease changed quite markedly during two weeks in Chicago. In France the epidemic was mild in the spring, became hemorrhagic in the June wave, and affected the kidneys in the September wave.

Just a word or two about vaccination: When we

were hurled headlong into this epidemic we all wanted to do something, but did not know what to do. So we got hold of the only vaccines that were of service. As a rule, they were made from strains of bacteria new to this epidemic, many of which had been laboratory grown for ten years or more. Later bacterial strains employed in the making of vaccine were those grown in this epidemic. Not only was this change made, but there was also a change in the method of making. They gave lipovaccines in a single dose. Early they gave one hundred or two hundred million bacteria at a dose, but toward the last they found that it was safe to give twenty-five to fifty billion. They were able to do this because the lipovaccine was less toxic than the saline vaccines.

SURGERY OF THE URINARY BLADDER*

By E. S. JUDD, M.D.

ROCHESTER, MINNESOTA

The bladder, situated beneath the pubic bones, is not so accessible for surgical intervention as the other abdominal viscera. Instead of being covered by a layer of protective peritoneum it is almost completely encased in a fatty tissue, which offers little if any resistance to infection. The inaccessibility of the organ and the difficulty in preventing infection are the sources of trouble in surgery of this region; however, the functional results obtained, even after extensive operations, are very gratifying.

It is possible to remove a large segment of the wall, and still maintain practically normal functional conditions. Urine enters the bladder by spurts and jets under the influence of a small sphincter muscle at the ureterovesical juncture, although this tiny muscle may be sacrificed in one or both meatuses without serious consequences³, the only difference being that the urine enters the bladder in a continuous stream. In a large series of cases lesions requiring surgical intervention at or near one of the ureteral orifices have made it necessary to sever the ureter and reimplant it into another segment of the bladder. By follow-up letters to patients it has been found that the kidney was functioning normally years afterwards without infection or hydronephrosis.

Our experience is now sufficient to enable us to assert that, while severing and reimplanting the ureter offers some additional risk, it is not sufficient to contra-indicate the procedure if by it a better ultimate result can be obtained, as in cases in which malignancy is suspected. If trans-

plantation makes recurrence less likely, then it certainly should be done. Severing and transplanting both ureters at the same time offers only the additional mechanical difficulty of implanting the ends of the ureters free enough to insure their remaining open during the period of healing, with the consequent swelling and edema. We have successfully reimplanted both ureters in several instances.

In certain cases the end of the ureter may be involved in the malignant process so that, when the disease is thoroughly removed, the ureter is not of sufficient length satisfactorily to be implanted in the bladder. In such cases we now ligate the ureter and allow it to drop back into the wound. This procedure was adopted with much trepidation. Our first case was that of a patient on whom a great deal of operating had just been done, and either nephrectomy or intestinal transplantation was out of the question. We thought that it would be necessary to remove the kidney within a few days; however, it was not necessary, nor has it been in subsequent cases. The ligation of the ureter has not appeared to add greatly to the seriousness of the situation. We do not hesitate, therefore, to ligate the ureter whenever the necessity arises and when we are sure that the opposite kidney is in good condition and is functioning well.

In resections of the bladder for a lesion at and obstructing the end of the ureter with a hydro-ureter I believe it is probably as safe to ligate the ureter as to implant it. Just what occurs in the parenchyma and pelvis of the kidney when the ureter is ligated has not been definitely de-

*Presented before the Montana State Medical Society, Billings, Mont., July, 1919.

terminated and cannot be worked out satisfactorily by animal experimentation. We have ligated the ureter many times during the course of operations, and we have not found a resulting hydronephrosis although we have followed some of these cases for a long time, while in all the animals on which the operation has been done a hydronephrosis occurred.

Weld has recently endeavored to determine the results of ligating the ureter in animals. He filled the kidney pelvis with a solution which shut out the *x*-rays as soon as the ureter was ligated; then frequent exposures of the kidney were made extending over a considerable period of time. He thought that by watching the outline of the kidney pelvis he could discover any tendency toward hydronephrosis; however, after the ureter had been ligated and the pelvis distended in this manner, no change in the shape of the pelvis could be demonstrated, but the salt solutions introduced into the kidney pelvis under these conditions were very quickly absorbed. For instance, phenolsulphonaphthalein left in the pelvis after ligation of the ureter appeared in the urine from the other kidney in a very few minutes. Such findings should be of great importance in convincing us of how readily infection, which gets into the kidney pelvis, may be generally distributed. Undoubtedly, when the ureter in man is ligated the back-pressure from the secreted urine is equal to or greater than the blood-pressure in the kidney so that the blood is very soon shut out of the kidney and it ceases to functionate and becomes practically scar tissue. Ligation of the ureter in a dog, apparently, is always followed by a hydronephrosis, and this may increase in size, rupture, and cause death. It was at first assumed that this difference might be caused by the kidneys receiving a blood supply through the capsule after the renal vessels had been compressed. In order further to study this condition we ligated the ureter and stripped the capsule from the kidney in several experiments, and it seemed to us that the same degree of hydronephrosis developed in the kidneys from which the capsule had been removed, as in those from which it was not removed after ligation of the ureter.

It has recently been established in experimental work on animals, and it has practically been established in man (Caulk and Fisher), that the ureter may be occluded for a number of days (the longest time about fourteen days); if the lumen of the ureter is re-established the kidney

will gradually begin to functionate and will usually return to its normal function. We have had a similar experience, although the conditions differ slightly. The ureter had been completely blocked for at least six days by a stone, and the kidney functionated within a few days after the removal of the stone. The fact that the kidney will survive and re-establish its function, even after the ureter has been occluded for some time, should be remembered in connection with the traumatization of the ureters, which occasionally occurs in extensive pelvic operations.

At least one-half of the bladder may be removed and good function obtained. It has been suggested that these small bladders gradually increase in size until they are normal; if a very large segment is removed, however, it is probable that the size will remain diminished, as is evidenced by frequency of urination.

The most important consideration in surgery of the bladder is the preservation of the sphincter muscle at the urethral orifice. This is necessary if the patient is to maintain any degree of comfort. If the question arises of whether or not the sphincter is to be sacrificed it is best to view the condition as inoperable, for the patient will practically never be satisfied without urinary control. The only alternative is to reimplant the ureters into the intestinal tract, a satisfactory procedure in many cases as the rectal sphincter will control the urine.

In operating for the unfortunate condition known as bladder exstrophy it has been our plan for a number of years to reduce the prolapsing bladder to the abdomen by some plastic measure and to maintain it there by closing over the wall. These operations have been successful mechanically, but they are not satisfactory from the patient's standpoint, as he has no better control of urine than before. In these cases also since there is no sphincteric control it is best to transfer the ureters to the colon, depending on the rectal sphincter to control the urine. Dr. C. H. Mayo has shown that this control is very often satisfactory. The objection to it is the possibility of infection ascending from the intestinal tract by way of the ureter to the kidney, which, undoubtedly, has occurred in many cases. However, with the technic of implantation of the ureter suggested by Coffey and by Stiles, the likelihood of severe ascending infection has been greatly reduced. The operation is a serious procedure, yet it improves the condition more than any other.

Another extremely interesting anomaly is the

extravesical opening of the ureter. The ureter may open into the vagina or into the uterus. It may be the only ureter on that side or the two ureters may be present in their normal positions with an additional ureter on one side opening extravesically. In these cases the history usually shows that there has always been more or less urinary incontinence. Sometimes, apparently, the ureter closes for a time; then opens and drains again. In our experience this condition has been found more frequently in girls, and is recognized by the fact that in addition to the normal urination there is a persistent incontinence. It is often difficult to locate the extravesical opening. The condition is rare, and may easily be overlooked or thought to be sphincter incontinence, a condition which practically never occurs in young women.

Diverticulum of the bladder, undoubtedly, is very often congenital. The condition is being recognized much more frequently than formerly, and is probably the cause of many cases of protracted cystitis, especially those associated with obstruction caused by the prostate. Diverticula are very satisfactorily treated surgically.

Foreign bodies are frequently found in the bladder.⁵ It is of interest to note that a foreign body, such as a piece of bone from an osteomyelitis, or a piece of metal thrust into the soft tissues about the buttocks, may gradually work its way into the bladder without producing symptoms of urinary soiling in the tissues.

The etiology of the formation of bladder-stones and the frequency of their recurrence in certain individuals is, undoubtedly, some type of infection. The risk of removing stones in old persons is not due to the operation itself, but to poor resistance and the existing infection. With a stone in the bladder, the kidney function is likely to be reduced.

Rupture of the bladder is a frequent occurrence, but, if the condition is recognized and treated early, all the patients get well. Often the rupture extends into the peritoneal cavity, and it is necessary to sponge out the urine. This type of peritonitis, however, is rarely fatal. Operation is indicated in any case of bladder-rupture, no matter how late it is recognized.

A very unfortunate injury is that of fracture of the pelvis and the tearing away of the neck of the bladder and the urethra. I have not had a great deal of experience with such cases at the time of the injury, but I believe that more attention should be paid to establishing some sort of

a urethra immediately. If scar is allowed to form in the tissues left after the injury, it is almost impossible later to develop any kind of a urethra. We see many patients in this condition every year, and, while the urethra may be forcibly dilated, a satisfactory result is seldom obtained even after several years of treatment. In instances in which I have seen the patient early, I have been able to penetrate the traumatized tissue and establish a urethra at once.

Inflammation of the bladder alone is not common, but inflammation of the bladder in conjunction with the same process in the kidney or other parts of the tract is common.

Tuberculosis never occurs in the bladder alone, although it is present in most cases of tuberculosis of the kidney. Cystitis, which was formerly considered common, is now an unusual occurrence except as a part of an infection in some other part of the genito-urinary tract. The same general statement may be made concerning ulcerations in the bladder. The submucous ulcer, a condition described by Hunner, is being widely discussed. It may occur as a very small lesion in the mucosa and then become an extensive edema in the submucosa and muscularis. There are no urinary changes. The symptoms are extreme irritability and frequency. It is difficult to recognize the condition as the findings are slight. The differential diagnosis lies between a submucous ulcer and the bladder symptoms of a neurasthenic.

The surgery of vesical neoplasms⁶ has not been altogether satisfactory. Fulguration, undoubtedly, has helped in the treatment of small papillomas, but, on the other hand, it has not always been judiciously used, and many patients who might have been operated on satisfactorily have lost that chance by continued fulguration, which was of no benefit.

Cancers of the bladder should not be fulgurated, and, in any type of case in which fulguration does not promptly relieve, operation should be done. Operation is of great benefit in cases of early malignancy of the bladder, but there is not much to be derived from extensive operation after the growth has penetrated the wall of the bladder.

In operating for tumors of the bladder it is necessary to make a large incision, in order to obtain sufficient exposure and to remove the prevesical tissues widely with the bladder wall. The transperitoneal operation is necessary only

in those cases in which the growth is on or close to that portion of the bladder.

Surgery of the bladder, especially so far as bladder tumors are concerned, must be done in the same manner in which the operations for neoplasms of the stomach and intestines are done. The principles of general surgery must be employed in this field, with the same surgical judgment and technic, if the good results secured elsewhere are to be obtained here.

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POST-OPERATIVE CARE OF THE INFECTED ABDOMEN*

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In discussing the post-operative treatment of the infected abdomen it is not my hope to present any new method of treatment, but, rather, to check up on the things we have been doing, in order to avoid all possible mistakes and get a clearer conception of the best method of handling abdominal infection. These cases constitute a large percentage of the serious surgical work the general surgeon is called upon to do, and, in spite of the most modern methods of treatment, they still furnish us with a large percentage of our surgical mortality. We are all, therefore, interested in this subject, and my purpose is merely to open a discussion which will be mutually helpful. I have obtained the material for my paper by reviewing the last five hundred cases of the infected abdomen that we have had. I have tried to analyze them, and find out the things that have helped us and the mistakes we have made, that we might obtain a more accurate knowledge of the best method of procedure in future cases.

The modern treatment of general peritonitis, as well as local infections of the abdomen, has been developed very largely during the last fifteen years. The pioneer in this work was the late Dr. J. B. Murphy, whose work on peritonitis was one of the greatest, if not the greatest, contribution to medical science made by this really wonderful teacher. It was my good fortune to be Dr. Murphy's interne at the time he was doing this pioneer work, and I can well remember when he reported the thirteenth case of general peritonitis that he had saved by his method of treat-

ment. This was in 1906, only thirteen years ago, so we see that this subject in its modern phase is really very recent. So successful was his work, and the work of other surgeons of that time, that their methods were very rapidly adopted by a large majority of surgeons, and with some slight modifications and improvements are generally practiced today.

I shall not attempt to take up the discussion of the different sources of abdominal infection, or to discuss the operative procedure which is taken to remedy these conditions, but will confine my paper to the post-operative treatment. It is true that the treatment will vary somewhat, depending upon the source of the infection, the location of the infection in the abdomen, and the infecting organism. There are, however, certain general principles underlying the treatment of these cases which we can discuss and apply to a large percentage of cases of abdominal infection.

In general, infection of the pelvis, especially gonorrhea, is not so dangerous to life, nor does it cause as severe symptoms as infection higher up in the abdomen. A walled-off infection will cause much less in the way of general symptoms, and is accompanied by much less danger to life than an infection which is not walled off. I think we might say the higher up in the abdomen the source of infection the greater the danger to life. The danger, of course, will also vary with the virulence and type of organism causing the infection; but we shall consider the general principles underlying the treatment of all infections of the abdomen, rather than of any particular infection.

Assuming that the patient has been operated

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on, that the source of infection, whether it be a gangrenous appendix, a ruptured bowel or gall-bladder, or a pus tube, has been taken care of and drainage established, what, then, is our immediate post-operative care? The patient is put to bed in Fowler's position. The extreme Fowler's position is not necessary in these cases, but the patient should be in a semirecumbent position, enough so that the pus drains down towards the pelvis. In order that the patient may get the quiet and rest desired it is necessary that there should be some support under the buttocks, and a comfortable back rest so that the patient can rest in comfort in this position. This is very necessary because one of the chief things in our early treatment is to keep the patient as quiet as possible. The purpose of the Fowler's position is, that the pus may drain into the pelvis where there is less absorption and also where it can be reached by the drainage that has been established. An exception to this rule would be a local infection in the upper abdomen, where the patient would not be put in the Fowler's position; but, if there is a general infection, even in the upper abdomen, there should be drainage in the pelvis, and the patient put in this position. The patient should be kept in the Fowler's position for at least the first week, and probably better for eight or ten days. After this there is no special advantage in the Fowler position because any pus that may still be in the abdomen should be walled off.

The patient should be given nothing by mouth for at least three or four days in a case of general peritonitis. The time at which he can begin to take liquid by mouth will depend, to a certain extent, upon whether or not complications arise, but in an uncomplicated case of general peritonitis, liquids by mouth can be given sparingly after the third or fourth day, and gradually increased until he is taking sufficient liquids. If the patient is in shock or his condition serious, he should be given a quart of normal saline under the skin before he leaves the operating-table. This will furnish as good a stimulant as can be given, and also supply the immediate need for liquid. In a large percentage of these cases liquid has been withheld previous to operation, and the body is in great need of it; therefore, I believe, we should make it a rule in all serious cases to transfuse the patient before leaving the operating-room. When the patient is in bed liquids are furnished by giving normal saline per rectum continuously. The amount of normal saline that

should be given during twenty-four hours varies with the condition of the patient. If he has been deprived of liquids for some time before the operation he will require a large amount during the first twenty-four hours, and it should be given to him. In such cases thirty minims per minute is not too much, and sometimes a patient will retain as much as forty minims per minute. After the body has been supplied with liquids, however, from fifteen to twenty minims per minute will be about all that the average patient will retain. There is no special harm if the normal saline is given a little too fast, especially after the first two or three days. The extra amount will wash out material from the lower bowel, and also stimulate the expulsion of gas. Normal saline should be given per rectum until the patient is taking enough liquid by mouth to take care of the body's need. If, for any reason, the patient does not retain normal saline, or it is impossible to give it per rectum, the patient should be given normal saline subcutaneously or intravenously, so that the body is kept supplied with liquids; in fact some surgeons are adopting the continuous intravenous injection in preference to giving it per rectum. The total quantity taken in twenty-four hours should be carefully recorded, the amount expelled, and whether or not it was with flatus should be noted. Vomiting after the first six hours should be reported to the physician by phone if he is not in the building, and all orders should be carefully written by the doctor in charge. The success will depend, to a very large extent, upon the careful detailed work of the nurse who is following out orders, and the closeness with which the case is watched, for complications will arise constantly. After three or four days the patient can be given a small amount of water by mouth, which is increased gradually until he is on a liquid diet, in about a week after operation in the ordinary case. I think it is better to keep away from a heavy diet a rather long time. The patient should not be given solid food until the second week, and not then if he is running any temperature, or if there are any signs of excessive tympanites or pains in the abdomen; however, if the abdomen is soft, and the temperature is normal during the second week, the diet can be increased until the patient is getting sufficient nourishment to gain in strength and weight.

Most patients with general peritonitis are more or less restless, and should be given, not only enough morphine to keep them from suffering,

but morphine should be given frequently enough to stop very largely the peristalsis of the bowels. This means a sixth or an eighth of a grain of morphine three or four times a day during the first two or three days with the average patient. I believe we make the mistake of giving too little, rather than too much morphine during the early days of a general peritonitis. Nothing is so effective except keeping food away towards stopping peristalsis and the spread of infection as morphine, and we have found that it is not a depressant in any way, but, rather, that it is a stimulant, in that it keeps the patient quiet and conserves his strength. It is also beneficial in helping the patient retain the normal saline. Other medication consists only in giving stimulants as needed. This, then, would be the routine handling of a case of general peritonitis for the first few days.

The next question is the care of the wound following operation. Wet dressings are universally used; and they should be kept up as long as there is any drainage from the abdomen. The drainage used by most surgeons at the present time, I think, is the common cigarette-drain. Unless the infection is well localized, as a rule two drains are inserted at the time of operation. After the first two or three days these tubes should be loosened up, and at least one gradually removed. We have followed the plan of inserting one small and one large cigarette-drain, removing the large cigarette-drain rather rapidly, but leaving the small one in until we feel sure that there is no longer deep infection. If we have a deep walled-off abscess of long standing in which there is a large amount of inflammatory tissue, it is necessary to leave our drainage tubes in much longer than in a simple case of general peritonitis, due, for example, to a ruptured appendix. In most cases the drainage-tube should be taken out in from seven to ten days after operation. If there is still doubt as to the presence of deep pus, when the last drainage-tube is removed, we have inserted a small catheter to keep a tract open, and yet to allow the muscles to come together. We have adopted the system of removing the drainage-tube as soon as we feel that the drainage is coming from the tract of the drainage-tube alone, and not from any abscess cavity deep down. This is shown by the absence of fever and abdominal rigidity, and by the fact that the drainage has decreased in amount until it stains only a small portion of the dressings. In all cases in which a large portion of the original incision is sewed up at the time of operation, we insert a

small drain at each end of the original incision down to, but not through, the peritoneum. I believe this is a great help in preventing the formation of subcutaneous and inter-muscular abscess.

I do not think it makes a great deal of difference what kind of antiseptic is used in the wet dressings. In case a fistula develops, the skin around the wound should be protected by some soothing ointment. If there is a wide skin surface to heal over, we have recently used small adhesive strips covering the edge of the wound. These stimulate the growth of skin, so that it heals more rapidly. The patient should be kept in bed until the skin incision is entirely healed. The muscles do not heal more quickly than the skin, and the tendency is to allow these patients to be up too soon, with the result that we get a weakened abdominal wall, if not a ventral hernia. Tympanites that develops may be troublesome, but it is usually taken care of by giving the normal saline per rectum; if, however, the patient is not able to expel gas, a stimulating enema may be given. If we feel that the tympanites is caused rather by an atonic condition of the bowels, it is best treated by giving pituitary extract. We have found that, given in moderate doses, it assists very materially in the expulsion of gas, and we have seen no bad results in connection with its use.

What are complications, and how are they to be treated? In a review of our cases we have found among the early complications the most frequent serious one to be some form of obstruction. This in a mild form developed in about 8 per cent of our cases. I do not mean by that that we have a complete obstruction of the bowels in 8 per cent, but, rather, that in 8 per cent of our cases we had enough obstruction to require active treatment. A large percentage were mild cases, and cleared up in a day or two. When obstruction develops everything by mouth should be taken away, and normal saline given per rectum. I do not believe it is necessary to give a large number of stimulating enemas, although one every day or two helps. Careful nursing is very important in these cases. Care in handling the patient, care to prevent bed sores, and especially care in keeping the patient in the Fowler position and comfortable. This care cannot be given by a probationer or a practical nurse in the country. It requires the constant watchfulness of a well-trained nurse. It is very important that the normal saline be kept going at the proper speed. The number of drops per minute should be count-

ed and recorded frequently. If the obstruction is very marked the stomach will soon begin to fill up with fecal matter, and should be washed out, at least, every six or eight hours.

This lavage of stomach should be continued at regular intervals until you no longer get material when you use the stomach-tube. At the same time the lower bowel should be washed out, and normal saline given. If the patient does not retain the normal saline, fluid must be supplied by giving subcutaneous or intravenous normal saline. As a rule, in two or three days a mild obstruction will disappear, and the patient will again begin to pass flatus, and the bowels begin to move. In the more severe cases it may take six or eight days before such a result is obtained, but I believe that this treatment should be persisted in if the patient's condition warrants, rather than that operative measures be attempted. We have had a number of cases in which the patient has taken nothing by mouth for over a week, and yet has suffered very little. It is surprising how good their general condition will stay if the stomach is washed out at regular intervals, and the fluids are supplied. Here, again, morphine is indicated, not only to relieve pain, but also to stop the peristalsis, and thus relieve the obstruction. It should be given early and in good-sized doses. If, under this treatment, the obstruction is not relieved, and operative treatment becomes necessary, the more simple the operation the better. If the drainage-wound is large enough, and if a loop of bowel presents itself in the drainage-wound, the most simple operation is to open that bowel, and thus produce a fistula. This will relieve the obstruction and cause absolutely no shock to the patient. If this is not possible I believe it is better to open the abdomen away from the site of the original operation than it is to try to relieve the obstruction by going through the original opening into the abdomen. This can be done under local anesthesia. The first loop of distended bowel, the lower down the better, should be brought out and drained. This should be closed off when the obstruction subsides. The danger, however, is of operating on these patients too soon, rather than too late. If properly treated a large majority of these obstruction cases will finally let loose, and the patient recover; and we all know that any operative procedure in the way of relieving the obstruction is attended by a very high mortality.

Fecal fistula, as a rule, is only temporary, and

not a real complication. In a very small percentage of cases, considerably less than 1 per cent with us, there was a permanent fecal fistula, which required operation later. Fecal fistulae occurred more frequently where there was a localized abscess which was opened without the removal of the appendix, than in any other class of cases. Where the appendix was removed, as was done in practically all the cases of general peritonitis, there were very few cases of fecal fistulae following the operation. We are not getting nearly so many fecal fistulae now as we did a few years ago, due to two things: first, the fact that we take out the appendix in a much larger percentage of cases than we did a few years ago, and, secondly, because we are not using the hard drainage-tubes that we did at that time, and are not leaving them in so long. The temporary fecal fistula requires no special treatment; it usually clears up in ten days or two weeks without any special symptoms. If there is a permanent fistula, it usually means that there is an old stump of the appendix that is still draining, or, perhaps, a gall-stone or an atrophic gall-bladder that must come out. After the patient is up and around and in good shape, which is usually several months later, this fistula is dissected out and the bowel closed.

Another troublesome complication is the formation of localized abscesses following the drainage of a case of general peritonitis. These may be multiple or single. If multiple, they usually develop soon after the abdomen is drained, or even before, and occur in patients that have had the general peritonitis for some time before the operation. They are more liable to occur if the source of infection is high up in the abdomen. This means a very serious condition, and one which is usually attended by death. A single abscess, however, is not such a serious complication. It more frequently develops in the pelvis or in the neighborhood of the drainage-tube. Occasionally we find a perinephritis, or rather a retrocecal abscess, which points into the lumbar region following a pus appendix. If the abscess is located close to the drainage and if the drainage is maintained down through the muscles into the abdominal cavity, the abscess usually drains spontaneously into the drainage tract, and is discharged through the regular opening in the abdomen. If, however, the abdominal wall has been allowed to close over, and an abscess developed deep down, it is necessary to go in again and drain. This is also necessary if the abscess

develops at a point far away from the original operation. Pelvic abscesses in women should be drained by making an opening in the cul-de-sac through the posterior fornix of the vagina. I might say that pelvic abscesses are not nearly so common as they used to be, because of the fact that we now put drainage into the pelvis in all cases of general peritonitis. Most of the abscesses can be opened under local anesthesia, and this form of anesthesia should be used. If the abscess is deep a general anesthetic may be required. Our next most frequent complication is phlebitis. This, however, is not peculiar to infected cases, though more liable to occur in them than in clean operating. We have not been able to find any method that seems to be of benefit in preventing this troublesome complication. Early immobilization, elevation of the limb, and a compression-bandage certainly shorten the course of this complication. It requires from three to six or eight weeks, as a rule, for the patient to get out of bed, and then it is necessary to wear some elastic support for a period of months or possibly years.

In our list of cases we had three serious secondary hemorrhages from the abdominal wound. One was in a woman with a blood-pressure of 220, in whom the superficial epigastric artery ruptured, forming an immense extraperitoneal hematoma, which, however, was controlled by pressure at the time. The other two cases were from deep down in the abdomen. One was controlled by packing, but in the third case we were not able to control the hemorrhage in this way. We found that by maintaining a constant pressure with the finger over our gauze pack we could stop the hemorrhage, and that is what we did. For six hours we maintained constant pressure with the fingers, and in that way succeeded in stopping the hemorrhage, and the patient recovered. It is a very serious complication, however, and one for which I have a very wholesome respect. In one case I think it was due to a high blood-pressure, in another it was caused by leaving in the tubes too long, and the third came without any known cause. These hemorrhages should be prevented by using soft cigarette-drains and by not leaving them in any longer than is necessary.

We found two cases of acute dilatation of the stomach which were not associated in any way that we could find with obstruction. This is also a very serious complication, accompanied by shock and prostration. Both cases were treated

by frequent aspirations of the stomach, a large amount of fluid being obtained in the first aspiration. During the first day the aspirations were repeated every four hours and after that every six hours until the dilatation disappeared. The last case we also treated by giving pituitary extract hypodermically, and I think shortened the course very much.

Of the late complications, permanent fistula, of which we have spoken, and ventral hernia are the most important. The prevention of the hernia is more important than the cure, though I do not believe it will ever be possible for us to prevent hernia appearing in some of these cases. The abdominal opening should not be left any larger than is necessary for free drainage. Any muscles that have been cut, if there are any, should be sutured together, even in a pus case; and it is very much better not to cut through the muscles, but, rather, to use the splitting operation in these cases. Free drainage during the first two or three days is absolutely necessary, but, in order to prevent hernia, the drainage-tube should be removed as soon as possible. If there is any doubt about pus being present, a small catheter can be left to keep the tract open, and yet allow the muscles to come together and heal. Hernia, of course, is much more liable to occur in cases where a prolonged drainage is necessary; and, I believe, it is much more frequent in the upper abdomen than in the lower abdomen, if we consider the relative number of cases. In the prevention of hernia I believe it is necessary to keep the patient in bed much longer than we are accustomed to do. I do not think that a patient after a pus case should be allowed up after the abdomen is drained until the skin wound is completely healed. It usually takes from three to six weeks for a patient to completely recover from these operations, and eliminate as far as possible the danger of hernia. The wearing of a simple abdominal support following operation helps prevent hernia, and it should be worn from three to six months or a year. It is also necessary that the patient avoid any heavy lifting for a long period of time. If, however, a hernia has developed, of course the only thing to do is to wait until the wound is absolutely free from infection, and then to do a secondary operation and close it off.

We found two cases in which there developed, following a ruptured appendix, a general pyemia. One of these developed multiple abscesses over the body, which were opened, and the patient re-

covered nicely. The other patient developed an acute articular rheumatism, septic endocarditis, chorea, and a hemorrhagic nephritis. It has now been about fourteen weeks since we removed her appendix, which was ruptured, and the abdomen has healed up completely. The septic condition continues, however, and her recovery is doubtful.

I have not taken up such complications as post-operative pneumonia, which are in no way peculiar to infection of the abdomen. I know that I have presented nothing new to you, but I hope that I have stimulated discussion of the subject. Those of us who are doing surgery in a relatively small way find these cases the ones that require most of our thought and attention. While the general principles involved in the treatment of these are well established, yet there are no cases where close watching and care about the details of treatment will give as much help as in these. Many lives have been saved by very careful and persistent work. We shall always have these infections of the abdomen, and they will always be attended by a high mortality, but constant effort on our part will enable us to save more and more of them as we learn better the fundamental principles of treatment, and how to follow them out in detail.

DISCUSSION

DR. H. M. WALDREN (Drayton): Dr. Ewing has presented this subject, which is probably of greater interest to us as surgeons, owing to the frequency with which we have to deal with it, than any other which we are compelled to face, in a very masterly manner, covering his subject very thoroughly. I would like to lay emphasis on a few of the points the essayist brought forward. The matter of conserving the patient's strength by sedatives in the form of narcotics is one of the essentials. In these cases opium should be pushed till it gives rest to our patients, for nothing is to be gained by permitting a patient to thresh about, as we usually find them doing, when the surgeon is of the belief that the drug is contra-indicated because of its tendency to lock up the secretions. Unless contra-indicated, due to a pre-existing nephritic condition, it should be administered in the form of morphine hypodermically in sufficient quantity to obtain the desired restful state in the patient. No rule can be laid down as to amount to be given in the individual case. In our work we commonly employ from one-sixth to one-fourth grain.

In the use of the saline solution we, in our work, believe in going a little farther than Dr. Ewing recommends, giving it intravenously before the patient is returned to the ward, then following with the Murphy drip. The morphine and the saline make a fine team, each working with the other, the opiate assisting in the retention of the saline and the saline assisting in the elimination and off-setting the untoward effects of the opiate. I wish to say that the Murphy drip

should be the complete apparatus, not a makeshift as we frequently find.

Too much emphasis cannot be laid on drainage. Years ago we all left the drainage-tube in too long, sometimes leaving it until nature pushed it out. Modern practice is to get the drain out as quickly as possible, as determined by the general and local symptoms. It is surprising how soon a drain comes to drain only the space occupied by itself. Many of the discharging wounds we have come to us are the result of too prolonged drainage and an improper type of drain. The old glass and stiff rubber drains have been discarded for others, soft, pliable, and gentle.

Of late in our work we have gone back to an old friend, the supplementary flank-drainage, which fulfills, in our estimation, essentials not obtained in the regular drainage through the operative incision. The more we are using it the more we are impressed with its usefulness. Regarding drainage and the possibility of post-operative hernia, I have this to say. The operation for peritonitis is a life-saving measure, and any decision must be made having in view that the life will depend on proper and efficient drainage, whereas, if the patient comes through, there will be a proper time to repair the hernia should one occur. If the drainage is not sufficiently free, it is going to give rise to complications, and will probably be the deciding factor in the case.

I want to say here that there are three fundamentals in operations for peritonitis, namely, speed, gentleness of manipulation, and efficient drainage; and the successful men operating on these cases meet these requirements.

I did not hear the essayist mention the necessity of keeping in mind the possibility of hypostatic pneumonia in the feeble or aged. This condition is best met by being on the watch for it, or, better still, being ahead of its development by the usual measures to guard against, if possible, its onset.

In conclusion, I want to say how thoroughly we appreciate Dr. Ewing's statements relative to the surgical nurse in a case of this kind. In private practice there is no one thing so conducive to the peace of mind of the surgeon as to know he not only has a trained nurse, but has an experienced surgical nurse on the case, one who knows what to look for and who makes prompt reports. Many times I have felt extremely grateful to the nurse on the case, and frequently have felt that a fair share of the credit for saving the life of the patient was due to her vigilant care.

I again congratulate Dr. Ewing for covering this broad and difficult subject in so capable a manner.

DR. THOMAS MULLIGAN (Grand Forks): I wish to ask Dr. Ewing to clear up some doubts in my mind about removing drainage-tubes. Does he remove the whole tube at one time, or withdraw it for an inch or two and cut it off and remove more in twenty-four hours? In other words, does he use the gradual withdrawal or withdraw *en masse*?

One thing he did not touch upon was the use of the antistreptococcic serum post-operatively in septic cases. I would like to know his experience. My experience has been such as to give it a place in septic cases.

Another point which he may have mentioned and

which slipped my attention, is the use of the hot stupe to the abdomen as a preventive of post-operative ileac trouble. I have found this to be a very effective measure at times.

DR. V. J. LAROSE (Bismarck): There are a few points I would like to place emphasis upon. First, gastric lavage. We are in the habit of washing out the patient's stomach, even before he leaves the operating-table in a case of pus-filled abdomen, and then leave a standing order if the patient vomits the dark-green fluid that the nurse shall wash out the stomach immediately and keep the stomach clean.

Another point about the drainage: A procedure I have used very successfully is a method of getting the drain into the pelvis. In all these cases of free pus in the abdomen there is pus in the pelvis. I do not refer to the walled-off abscess, but to the free pus cases. We use the short proctoscope, and pass it down into the pelvis and then take the cigarette-drains and place them in that way, and then pull out the proctoscope. I think you will find in trying to place several cigarette-drains into the abdomen that you place them and think you are going to the bottom of the wound, when, as a matter of fact, they are all curled up and do not reach the bottom.

As to the establishment of a fecal fistula: I do not believe that is done often enough.

I think Dr. Ewing emphasized the fact that we should operate early, and not late. I have never seen a case in which I regretted early interference, but have seen late ones. I make it a point to bring out a loop of the bowel so that there will be a fistula at the wound and the dressing will hold it. If you reach in and pick up a loop you will have a bad time on account of the skin excoriation due to the fluids exerting a digestive effect upon the skin; but you will not have this trouble with a little fecal fistula. In establishing the fecal fistula and putting in the catheter, if you will first put the catheter just inside the serosa and then put a puckering string around so that you invaginate the portion of the serosa back in the belly, this will close the fecal fistula automatically when you remove the drain.

DR. W. F. SIHLER (Devils Lake): These cases are troublesome to all of us, and we are always glad to hear the experience of somebody else and perhaps pick up something of value. It is very seldom that two cases terminate just exactly the same, and one's technic constantly changes. I think in these cases the principal thing and the one of paramount issue is the thoroughness of the drainage. I mean by that the proper placing of the tubes, and, previously to that, pretty thorough inspection of conditions inside to enable one to decide exactly where the tube should be placed. I have found the pelvic drain to be best when it is good and large. I have used soft-rubber tubing, as soft as I could get, and usually put a little strip of

gauze inside so that it can be removed within the first twenty-four hours. This last fact, I have found, increases the usefulness of the tube for drainage, as it removes the fresh blood-clots caused by oozing at the time of operation. I then remove the tube as soon as possible, gradually for the first forty-eight hours and then remove it completely and replace it with a little bit of gauze, just sufficient to keep the entrance opening patent.

In appendix infections, even though the infection is local, I have found that taking care of the retrocecal fossa is a very good plan. I have not used the stab-drain for a good while unless the infection was wholly retroperitoneal, for I have found that nothing comes from it after a day or two and its position is irritating to the patient and limits his position in bed.

Of almost equal importance, to my mind, is the position of the patient in bed for the first twenty-four or forty-eight hours subsequent to operation. I put him up in a half sitting or Fowler's position, and thus take advantage of gravity.

DR EWING (closing): Dr. Waldron spoke of the intravenous normal saline method instead of the drop method. It is interesting to know that some of the men in the East are using a continuous intravenous normal saline. They have a small machine which injects a certain number of drops per minute into the vein. The machine is run by an electric motor, and the operator can regulate the amount of saline that is being introduced into the system. We have not introduced this yet, but I think it is a good thing and we are going to use it. Many times we put the saline into the vein, especially on the operating-table.

We have practically abandoned the puncture-wound over the groin. We do it in a few cases, but only where we feel that we have a large amount of pus in the abdomen, and there is danger of multiple abscesses. In that case we usually drain over the left groin to take care of any abscesses that may develop from the site of the other incision.

Our practice has been to introduce a small tube or sometimes a large one, behind the cecum, and a second tube into the pelvis. The first is taken out rather rapidly, within the second or third day. We remove the drain that goes down to the pelvis an inch or two at a time.

I am glad Dr. LaRose mentioned washing out the stomach. We do that far too little. We have not followed his rule of washing out the stomach before leaving the operating-table, but I think we shall.

In case of obstruction, it is a good thing to go through the wound and produce a fistula, and there is no reason why you should not open it when the obstruction first develops. I think you should not go into the abdomen elsewhere to relieve the obstruction, except as a last resort; and when done it should be on the other side, away from the adhesions.

ON THE TECHNIC OF INGUINAL HERNIOTOMY, WITH SPECIAL REFERENCE TO THE CLOSURE OF THE INTERNAL RING IN LARGE HERNIA*

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BISMARCK, NORTH DAKOTA

The object of this paper is to call attention to a few anatomic and technical points which are of special importance in our efforts to obtain 100 per cent permanent cures through the radical operation for indirect inguinal hernia. Although the technic, which will be described, and the reasons for its adoption cannot be claimed to be original except in some of the details, the ensemble of the proceedings is unquestionably of quite recent origin.

During my service in the army in the past year and a half I have had the opportunity of having under surgical treatment and observation several hundred cases of indirect inguinal hernia. In the spring months of 1918 at the cantonment hospital where I was then on duty our daily list of herniotomies varied between ten and twenty-five. It was, therefore, natural that this subject required and was given a somewhat intensive attention in our surgical service. As a result of our studies and experiences we arrived at rather definite conclusions as to the technic most likely to offer permanency of cure. Most of the hernias had not been subjected to previous operation, and, therefore, gave us the primary opportunity of offering a cure through operation. But there were presented to us a fair number of cases in which recurrence had taken place after one or more earlier operations. These were of special interest because they gave us the opportunity of trying to find out why recurrence had taken place.

Associated with me in the service were a number of surgeons, some of greater and some of lesser experience in the treatment of hernia. Discussions with these surgeons, and the opportunity of familiarizing myself both with their previous results and their actual steps of technic helped materially in throwing light on the subject.

Without going further into details it may be stated that there were found to be four general causes for failure in operation: 1. Leaving the stump of the sac too long. 2. Failure to close properly the internal abdominal ring. 3. Leaving too much unnecessary tissue attached to the cord within the internal ring. 4. Letting the

patient resume work too early after operation for large hernia.

It is assumed that all those who attempt any hernia operation as a procedure of choice, are already familiar with the anatomy of the structures involved. The only structure requiring review for the present purpose is that of the spermatic cord. The spermatic cord is composed of several elements. Among these the vas deferens and the spermatic artery and veins, all passing through the internal abdominal ring, are the most important. A continuation of the transversalis fascia lies in front of the vas and vessels, and becomes a sheath for both just outside the ring. A loose areolar tissue with fat appears under the transversalis fibers. The cremaster muscle forms a covering over the cord, but is, from a surgical point of view, an element of the cord. The ilio-inguinal nerve passes obliquely over the cremaster, and the genital branch of the genitocrural nerve escapes through the internal abdominal ring. When an indirect hernia exists there is, in addition, the hernial sac incorporated with the cord and within the prolonged transversalis fascia.

The cremaster muscle has its origin from the outer part of Poupart's ligament, including that sector of this ligament which lies nearest the internal ring. This is the first of the cord elements which must be identified and properly disposed of in the operation, after the inguinal canal has been laid open. The fibers attached opposite the internal ring should be loosened from Poupart's ligament so as to allow close contact between the lower margin of the internal oblique muscle and Poupart's ligament in the closure of the ring later on. If the cremaster is very heavy it will cause the cord to remain too voluminous and to occupy too much space under the fascia of the external oblique at the completion of the operation. In that case a part or all of the cremaster fibers should be cut across as near their origin on Poupart's ligament as possible. The cut ends of the fibers, assembled and held by a forceps, should be lifted and dissected loose from the rest of the cord. The forceps holding the muscle is laid aside until the closure of the external oblique is completed. Then the forceps with the cremas-

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ter is pulled up over the external oblique aponeurosis where the muscle is sutured into place in such a way that a slight lifting action is seen to be exerted on the structures of the scrotum. After the cremaster has been disposed of, the hernial sac is identified and dissected free. At its base it will be found to lie above and between the vas deferens and the spermatic artery. When the sac is markedly adherent, or prolonged along the cord, no time should be wasted in trying to find its apex by dissection outside the sac. It is better to open the sac at once, insert a finger, and dissect it free while the finger is used as a tractor. A better hold on the slippery peritoneum is obtained by winding a layer or two of gauze over the finger. Hernial contents, if present, are replaced, and the base of the sac is loosened in its entire circumference. It is the writer's opinion that, if there is any one step of more importance than other steps in a herniotomy, it is thoroughness in liberating the sac from its surrounding structures within the internal abdominal ring. In the first place, thorough and high freeing of the sac alone will permit the stump to retract into the abdomen; and, secondly, when the sac is radically liberated, the margin of the internal ring will also have been freed from all the fibrous and areolar tissue, which, otherwise, will interfere with proper closure of the ring.

In most old hernias there is found a scar-like area of constriction on the peritoneum within the sac. This fibrous area is adherent firmly to the neighboring parts of the cord. If this constriction should be considered the true neck of the sac and ligation made at this point the hernia is not likely to be cured. Further examination will reveal the fact that there is a segment of sac extending from the white scar up to the niveau of the abdominal peritoneum, which segment may be from one-fourth to one full inch in length. This is not all. This fibrous area is firmly bound to the cord *outside* the internal ring; therefore it cannot retract to a point high enough to permit the internal oblique to contact properly with Poupart's ligament in the closure of the internal ring. A stump of the hernial sac remains within the internal ring. The hernia is not cured; it is merely abbreviated. A wedge of peritoneum extends through the abdominal wall at the conclusion of the operation. Faulty suturing of muscle to Poupart's ligament acts as an additional invitation for a subsequent increase of this peritoneal pouch. It is improper to term a reappearing pain and bulging in the inguinal canal, after this sort

of technic, a *recurrence*. It is a *persistence* of the original hernia.

When the sac is properly liberated from the internal oblique above and from the vas and spermatic vessels below, and traction is made on the sac upward, it will be seen that the vas comes out at the inner or mesial border of the opening and the vessels at the outer margin. It is seen further that the vas comes in an upward direction from the region of the pelvis while the blood-vessels come from above. A triangle is formed by the peritoneum above, the vas mesially and the blood-vessels externally. The dissection and preparation of the sac should not be considered completed until this triangle is clearly identified and seen. While traction is exerted on the peritoneal tube transfixion and ligation are made at the highest point possible to reach with needle and suture. If the sac is broad a puckering suture is needed. After the sac is cut away the stump retracts promptly and disappears through the opening.

The vas and spermatic vessels are but loosely connected in the internal ring. They approach one another and become more firmly associated about one-half inch outside the ring. If the hernial opening,—that is, the internal ring,—is so large that the index-finger can be thrust readily through it, or larger, then the tight closure of the ring is made more certain if the vas is separated entirely from the spermatic vessels and the sutures passed between them. The larger the opening, the stronger is the indication for this procedure. It is necessary always to leave enough opening to permit the two structures to escape from the abdomen. By allowing the vas to come out at one place and the vessels at another this necessary opening is divided into two openings, each of which need be only half as large as if the two openings are one. This reduces the remaining weakness in the entire technic of herniotomy, practically by half, for the probability of recurrence is in direct proportion to the size of the remaining opening. When vas and vessels are separated from each other and separated from all unnecessary fat and fibrous tissue each requires a very small opening, about one-eighth of an inch in diameter. There is in reality but slight disturbance made to either vas or vessels in this technic, for the hernial sac and contents have already pushed these structures away from one another, so that the vas remains close to the deep epigastric artery on the inner side and the spermatic vessels close against the junction of inter-

nal oblique and Poupart's ligament on the outer side of the internal ring.

Two artery forceps are pushed between vas and vessels, and clamped over the margin of the external oblique aponeurosis so as to hold the two structures separated and out of the way for the placing of the sutures. Another forceps is placed similarly under the cord below the vas.

When the dissection described is completed properly it will be found that the lower margin of the internal oblique at this point presents a broad fleshy surface. The transversalis muscle lying under the internal oblique increases the muscular surface now ready to be sutured to Poupart's ligament. No tissue must remain between these muscles and Poupart's ligament. The approximation must be direct and firm, but without undue tension. Three or four interrupted chromic catgut sutures are placed between vas and vessels. In a large opening a greater number will be required. The sutures are introduced from outside and near the margin of Poupart's ligament. The full thickness of the muscles (internal oblique and transversalis) is included in the sutures taken from without inward, but the width of the bite need not exceed one-third of an inch. The needle is repassed through Poupart's ligament well toward its lower margin. Care must be exercised that the sutures are placed at points directly opposing one another on the two surfaces about to be united. When the catgut is tied outside the ligament, the internal oblique will thus have the most even and the broadest application possible to Poupart's ligament. The internal ring is closed. In a similar manner two or three additional sutures are placed below the vas to approximate conjoined tendon to Poupart's ligament. No tissue should intervene between these structures if uniform and permanent adhesions are to be expected. The loose tissues overlying the margin of the conjoined tendon must be cleaned away until this aponeurosis is bare. The uppermost suture below the vas should be placed high enough so that the vas is held somewhat firmly against Poupart's ligament. Owing to the great rigidity of the vas there is but slight danger of harmful impingement upon it or upon its accompanying artery by the elastic muscle fibers. The spermatic vessels are also packed into a very small compartment by the stitch nearest them, but more regard must be given to possible constriction of veins here than

in the case of the opening for the vas. The spermatic vessels will rest in a muscular foramen of considerable length and the reformation of an internal ring at this point is scarcely within the range of possibility, after proper healing.

This method of closing the internal ring in a painstaking and accurate manner places a firm and lasting barrier at the very point where the indirect inguinal hernia always begins its protrusion through the abdominal wall, namely, between the vas deferens and the spermatic artery. The method was first described by Dr. Torek of New York seven years ago (*Medical Record* June 22, 1912). Hernæ in which the internal ring is narrower than the size roughly indicated above, do not require a separation of vas and vessels provided the other steps of radical preparation of anatomic structures have been followed out.

The sutures should all be placed before tying any of them. Tying should begin above and proceed to the one nearest the pubes. The catgut is usually tied outside Poupart's ligament, but not cut. The ends are rethreaded on needles which are made to pass through the margin of the external oblique aponeurosis above, after removing the three forceps which have held the cord out of the way up to this time. A second tying over this margin completes the closure of the inguinal canal. A smoother closure is obtained if the catgut is not tied at all until after the ends have been passed through the external aponeurosis so as to cause it to lap over Poupart's ligament with one single tying, but this method is a little more difficult of execution, and requires more assistance.

Using the same suture for the double closure reduces to a minimum the amount of catgut to be absorbed. Also, any possible oozing of blood or lymph in the depth of the wound finds a ready route for drainage along the catgut, into the deep superficial tissues where it is more easily absorbed.

Work requiring severe muscular exertion should not be undertaken for several months after a large hernia. Every patient should be taught that his groin will remain "weak" for two to four months after a herniotomy.

Clean dissection, careful control of all bleeding, gentle handling of tissues, and asepsis are essentials if 100 per cent cure be the standard.

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1920 IS CONVENTION YEAR

Minneapolis expects to have, between the first of January and the last of May, thirty-five conventions. They have already been slated, and they range from national to county assemblies, and embrace all sorts of topics and industries. One of the important conventions, however, has been left out, and that is Minneapolis Clinic Week, which brings to Minneapolis approximately five hundred doctors each spring. These men are men who are looking for information and instruction; and they come to Minneapolis with the idea in mind that they are going to get something for their time and efforts.

The Minneapolis Clinic Week of 1920 is expected to outdo anything it has done before. We are, in a way, getting into the swing of things, and we understand better what men from other states and from our own state need, now that these clinics are thoroughly organized.

HOSPITAL BEQUESTS

The publication of the will of the late Henry Clay Frick appears in all the newspapers of the United States, and it will send a thrill of joy and expectation through the hearts of many a millionaire to think that Mr. Frick, with all of his former industries and, later, the collection of choice paintings, together with his interest in public institutions in various cities, should take time to organize the distribution of \$12,500,000 among hospitals in the East. Then, too, an equal

sum, or more, has been given to universities and other educational centers, and for educational purposes—all of which shows the carefulness of the man in the distribution of his enormous wealth.

This form of philanthropy has received a great deal of attention in the East, but is almost unknown in the West. Without regard to creed, or character, or type of hospital, Mr. Frick has given hospitals from \$500,000 to \$1,500,000. The Twin Cities have suffered greatly by the lack of interest of the moneyed men in hospitals and institutions for the care of invalids. In Minneapolis, for instance, the University Hospital received about \$130,000 from the Dr. Elliot estate. This was not given outright by Dr. Elliot before his death, but was disposed of by his family, or executors, who chose to endow the University Hospital. In order that this could be accomplished, sixteen or eighteen citizens of Minneapolis gave the land upon which the hospital stands. A second endowment was that of the late Mr. Dunwoody, founder of the Dunwoody Institute, in Minneapolis, who built the Abbott Hospital for Dr. Abbott during his lifetime, with the understanding that eventually it was to become the property of Westminster Presbyterian Church. And now Mr. T. B. Janney has added, for the care of sick children, to that eighty-six-thousand-dollar hospital a new wing that will cost in the neighborhood of \$100,000. In St. Paul, the late Catherine Miller, who was a wealthy woman, gave to her executors the sum of \$1,600,000, of which, \$400,000 was to be devoted to hospital construction and the remaining \$1,200,000 to endow the institution after it is occupied. This hospital is to have 250 beds, and, owing to the high prices which prevail now in building and building materials, the Board has been obliged to seek some means of getting a further amount of money to complete the construction of the building in order that the endowment fund may not be in any way encroached upon.

So far as the writer can recollect, these are the only hospital bequests that have ever come to the Twin Cities, and yet men in the Twin Cities who can count their wealth in millions are still uninterested. Many men acquire enormous fortunes through their business manipulations, but they dispose of their money in some other way, or perhaps hold on to it. Later, it may develop that there will be ample provision made for new hospitals, or for the betterment of old hospitals, in

both cities. This, of course, may be an iridescent dream, for it hardly seems possible that these men who have made their money in all sorts of business deals will have become educated to the necessity of distributing this easily gotten wealth to benefit the sick and poor of the cities, as this would hardly be called constructive work on the part of a millionaire. He gives generously, of course, to various charity organizations, sometimes generously to organizations that are not in need of his money, thereby pauperizing the institution which he chooses to aid, but he has not yet received the stimulus which will make him a hospital contributor.

People of St. Paul and Minneapolis endow rooms, occasionally, in a hospital, which must cost them as much as two or three or four hundred dollars, and perhaps more in some instances, but the sum is a paltry one, insignificant, and simply means that one's name is put on a brass plate and nailed on the door of the room which is his private donation.

The Board of Trustees of one of the hospitals in Minneapolis, which is said to be ably managed and ably officered, is unable to clear the hospital of its indebtedness, yet it is well known that the husbands of several of the women who are interested in the hospital have made enormous sums of money within the past year or two, and it is rather inconceivable that this hospital can not only be freed from its indebtedness but be enabled to have a larger and better building attached to the buildings already constructed.

Who is to educate the millionaire contributor? Is it the doctor or an officer of the hospital, or must it be done by newspaper propaganda? One would think that the publication of such an act as Henry Frick's would stimulate some moneyed men to endow and equip hospitals that would be a credit to them and the cities in which they reside. Why wait until after one is dead to let the family and children squabble over the provisions of one's will? Why not invest it now so that it will bring forth fruits? The present situation is almost like that of sending flowers to a funeral, where the corpse is unable to enjoy the aroma, whereas, when flowers are sent during the period of illness, not only the patient but the family is benefited thereby.

A "Hospital Day" should be organized for the dissemination of hospital knowledge and information in order that the moneyed people of every town or city may understand that our hospitals are greatly handicapped, both in equipment and

endowment. Some of them are badly in debt, and are unable to carry on research work or do the necessary scientific work that every hospital should have under its control in order to increase the efficiency of the hospital and of its staff and management, and, incidentally, but first in order, the benefits which the patients would derive from such ample provision.

It is hardly fair to ask doctors to go out and raise money for this purpose. It should be the function of a trained committee who are familiar with the situation and know what is needed in hospital construction, equipment, and management. They are the ones who should take up the burden of hospital finance. The doctors will ably support them, and will probably keep the hospital full so long as it is maintained up to a high standard.

HOSPITAL STANDARDIZATION

For several years past state and national hospital associations have considered, mainly through committees, frequently non-reporting committees, the subject of hospital standardization; but all progress seems to have been blocked by the lack of a definition of the word "standardization," and the consequent misunderstandings in debate upon the subject.

At the seventh annual meeting of the American College of Surgeons, held in New York City in October, the matter of hospital standardization took a somewhat definite form, at least as to the meaning of the term.

Probably all of our readers know that the American College of Surgeons now has a membership of over three thousand, most of whom practice surgery exclusively; and that Mr. John G. Bowman, an educator of distinction, is the College's "Director of Education." Mr. Bowman has spent the past two years in gathering data for the guidance of the movement for standardization, and from such data he and other officials have drawn conclusions with very great caution. He has inspected, in the United States, 617, and in Canada 34, general hospitals, each with a capacity of 100 or more beds. Of the former, 190 (about 30 per cent) and of the latter 8 (about 23 per cent) are listed as meeting the minimum standard, which was established by the College from the data gathered, permissible in a hospital of 100 or more beds,—that is, permissible from the standpoint of the patient.

The mere statement that less than one-third of the larger hospitals in the United States and

Canada do not reach a minimum standard of efficiency is unpleasant, and yet it is not so serious as the bare percentage would indicate, for a hospital lacking in some details of the standard, conservatively, might be doing very high-grade work; therefore it would be unwise to assume that the 800 inspected hospitals in the United States and Canada are doing low-grade work.

Whatever conclusion is drawn from the figures, it is only too clear that hospital abuses and inefficiency must be reduced to a minimum, and this can be done best by the adoption of methods (standards) that are applicable to conditions permitting inefficiency and abuses. The truth is, that in every effort to standardize the work of man almost unsolvable problems will be met, and the chief of these is human nature, out of which spring jealousies, professional and lay, which are deep rooted and are often based upon fear rather than reality. There are, also, stupidity and ignorance "in quantity sufficient."

Mr. Bowman, in his sane report, says that the movement is one to develop team-work in the hospital, which, of course, will supplant the individualistic way that has been a source of both strength and weakness in hospital management and the root of most abuses. He says that some of the hospitals have felt that the College endeavors to force upon them "a sort of set standard." If it does not, then what does "standardization" mean? We think the fear is of a specific and unattainable idealistic standard, which, naturally, would be resented by most, if not all, hospitals. His meaning is clear enough when drawn from all the report says, or even from the standard as defined in the report, which is as follows:

1. That physicians and surgeons privileged to practice in the hospital be organized as a definite group or staff. Such organization has nothing to do with the question as to whether the hospital is "open" or "closed," nor need it affect the various existing types of staff organization. The word *staff* is here defined as the group of doctors who practice in the hospital inclusive of all groups, such as the "regular staff," the "visiting staff," and the "associate staff."

2. That membership upon the staff be restricted to physicians and surgeons who are (a) competent in their respective fields and (b) worthy in character and in matters of professional ethics; that in this latter connection the practice of the division of fees, under any guise whatever, be prohibited.

3. That the staff initiate and, with the approval of the governing board of the hospital, adopt rules, regulations, and policies governing the professional work of the hospital; that these rules, regulations, and policies specifically provide:

- a. That staff meetings be held at least once each

month. (In large hospitals the departments may choose to meet separately.)

- b. That the staff review and analyze at regular intervals the clinical experience of the staff in the various departments of the hospital, such as medicine, surgery, and obstetrics; the clinical records of patients, free and pay, to be the basis for such review and analyses.

4. That accurate and complete case records be written for all patients and filed in an accessible manner in the hospital, a complete case record being one, except in an emergency, which includes the personal history; the physical examination, with clinical, pathological, and x-ray findings when indicated; the working diagnosis; the treatment, medical and surgical; the medical progress; the condition on discharge with final diagnosis; and, in case of death, the autopsy findings when available.

5. That clinical laboratory facilities be available for the study, diagnoses, and treatment of patients, these facilities to include at least chemical, bacteriological, serological, histological, radiographic, and fluoroscopic service in charge of trained technicians.

The above are the requirements which the College deems essential to the success of every hospital; the things due to every patient, pay or free; the things due the trustees who stand between the physician and the patient and between the hospital and the public.

The standard, it should be emphasized, has nothing to do with the "open" or "closed" hospital. It deals constructively with abuses that have grown up, to a large extent, thoughtlessly on the part of any individual or group of individuals. It apparently contains nothing to which objection can be raised, yet serious difficulties will be met in the practical application of the standard; and it seems to us they should be openly discussed. We wish at this time merely to suggest the main difficulty, and to put our comment in a form suggested by some hospital superintendents, surgeons, and laymen at the head of big hospitals. We feel justified in setting forth these things because the solution of the problem is in the hands of the College and of the staffs rather than in the hands of the superintendents. We shall give two illustrations which are concrete incidents:

First: A really great superintendent of a large hospital says the jealousies of every staff he has had to deal with destroyed the staff's usefulness in the management of the hospital.

Second: A very efficient superintendent, a layman, of a church hospital, says the staff in his hospital is composed of men who have established their reputations for efficiency, some of whom have operated large private hospitals; and they will not be dictated to by other members

of the staff when, perhaps, the reputations of such men have not been established.

We cite these two instances—perhaps classes—as indicating a state of mind, a condition to be met. Suppose, in the second case, a staff is organized with two strong, or strong-minded, surgeons at its head, one of whom is a member of the College of Surgeons and one is not. Here is a vision of cats! Suppose one of these two surgeons was a charter member of the College of Surgeons, and one was kept out of the College until this year because of some unfounded suspicion that he was a fee-splitter. Will they work together? And suppose innumerable other things that grow out of human nature, how will the ill consequences be met?

One answer to these actual and fancied things is, that these conditions must be met by kindness and yet fairness in a wise committee of the College, and not by coercion in any form, particularly in the form of the early publication of a classified list of hospitals which will tend to degrade some and exalt others. The lay mind and the professional mind are to be dealt with, and only the wisdom of the gods can so deal with both as to bring about harmony, disinterestedness as to self, and efficiency in hospital work.

May the gods bless the College of American Surgeons, and endow it with their wisdom.

NATIONAL MORAL DELINQUENCY

If one had time to sit and think and analyze the situation of the universe as it appears today, a variety of suggestions would come into the field of consciousness, substantiating, in a way, the fact that there is a great deal of delinquency in the world, much of it belonging to the moral type. This is the outcome of very natural causes which have produced types of hysteria unknown before, forms of nervous diseases, and types of insanity that widely differ from those described in our text-books on nervous and mental disease. The old classification of insanities included one that was called "moral insanity," but this has been discarded for many years as an undesirable term.

That the world in general is more or less delinquent there can be no shadow of doubt. This term can be applied to countries, to races, and to individuals, and it carries with it the suggestion that there has been a tremendous change in the attitude of individuals of all classes. Perhaps the important feature is what might be termed a general indifference to not only intellectual but

domestic and commercial codes. The churches are testifying to the fact that it has been very difficult since the war to reorganize their congregations, and the family life has been so disorganized in its domestic relations that its errors are heralded in the press daily, while, from a commercial point of view, the so-called profiteers, who have become rich during the past five years, have created a class that is at least seemingly a true type to the ordinary lay mind.

This commercial spirit has invaded not only industries in general but utilities that belong to the public, and it has shown its ugly face in the manipulators of the materials of war as evidenced by the numerous reports of waste and destruction and, further, indifference to the protection and use of materials which have cost hundreds of millions of dollars. This gross indifference has spread from country to country. It has involved the peoples in politics, in labor, and in industrial pursuits; and these large sections may be divided into smaller groups, in which a few have attempted to control the political situation, the industrial situation, or the labor situation as well as the management of industries. Men and women have become enriched, perhaps in a very small way, but sufficiently so to overturn their moral sense of proportions, values, and expenditures. The man whose wife formerly worked out to help sustain the household now has discontinued her labors because her husband is much better paid, but she spends his money extravagantly just the same, whether rightly or wrongly. The whole race has become extravagant in their ideas, feeling that money is easy to obtain, and they delight in its expenditure without a thought of what may be coming in the future.

The industrial side, from this point of view, even among the few, has enormously increased prices of commodities, machinery, and, in fact, everything that is more or less useful, but the excuse for this is, that higher wages are paid, higher demands made, and such other things as would interrupt the normal industrial progress.

Fortunately for the United States, no other country can point the finger of scorn at us because all have their own industrial problems to deal with; and in all countries there have been strikes of various magnitudes. These strikes have been of such a character and have been carried out with such deliberateness, without due regard or due respect for the people at large, that they assume an immoral aspect. Any body of men who attempt to tie up the necessities of

life and comfort, or to prevent maintenance of industrial organization, come under the classification of delinquents, and the people who have endured and suffered, patiently waiting for the cessation of these ungodly, unnecessary, and insane ideas of labor agitators, will very soon turn the tide of public opinion and perhaps reconstruct some of the laws which will prevent this needless, wasteful attitude of industry and labor toward the public.

Perhaps, for various reasons, there has been a shortage of industrial work for the unemployed, but it is almost equally true that the unemployed have decided to change their method of living, that is, to work less and indulge their natural-born criminal instincts. The result has been appalling. Highwaymen, bandits, and murderers have operated in a cold-blooded manner without any consideration of a man or his business. They disregard the sufferings which they bring about. They have lost their moral conscience, if they ever had any. Granted that they had, the conditions of today have developed that something within them has broken loose and destroyed their moral fiber and shown their mental delinquency.

We do not mean to contend that these people are all insane and should be confined to a hospital, but we do assert that they are more or less deficient, and the only way to handle them is to put them in restraint under legal process. Many of these men who are indulging in night crimes are not foreign-born citizens, necessarily. They are citizens of the various governments to which they belong, or at least they have been born and raised in their respective countries, but their state of mind has gone on until they have developed a crookedness and a moral indifference to everything but their own selfish ends.

Then, too, the various movements that are springing up all over the country, segregated into various groups in attempting to defend various so-called principles which are really the destruction of moral principles, have added to the unrest and uncertainty of the people at large. These groups are variously described as one sees fit. They call themselves all sorts of names, and the rest of us call them by some other name, but they have their own attitude toward others. They try to split hairs as to which is the chief and which are the minor groups, and so they disrupt communities in general. Another illustration of their moral indifference is the attitude they maintain toward the Government. Defiance, disorder,

unthinking expressions, and speeches which tend to inflame, seem to be the order of the day, and the Government is, in a measure, nearly powerless to suppress these various agitators. One must know, or one may think, that the Government is slow in restricting one in his liberty or speech, but when the time comes the Government evidently will act for the best interest of the nation in order to bring about a peace of mind, at least, which we have all been looking for, and waiting for breathlessly, hoping almost against hope that the country will settle down to a normal state. So long as these irritating factors are about us it is impossible to conceive that peace is close at hand or that security is a part of the Government office, and only by very strenuous and determined measures can these people be brought to see that the laws of the country should be the fundamental principle of order and propriety.

The past five years have done much to show the tendency of the people toward disorders of the mind and nerves. The soldiers and sailors who have undergone long and vigilant service on land and sea have naturally let down, and many of them, enormous numbers of them, have become neurasthenics and psychopaths. These same people, if they had been guarded, and no such provoking causes as we have had to encounter had been presented to them, would have lived a sane and normal existence. Conceding the best of intentions, they have suffered from the faults of others, from the men higher up in moral and mental delinquency, and, as a result, unrest has spread like an epidemic, gathering into its fold totally unexpected adherents and victims. Out of all this disorder there will be, in all probability, political, industrial, and governmental upheavals, and the people of the earth will suddenly awaken to the fact that there has been a tremendous drop. The burden of the fall will come upon the many who have attempted to carry out selfish, mean, delinquent, or insane principles.

THE REPORT OF THE SEVENTH ANNUAL MEETING OF THE AMERICAN COLLEGE OF SURGEONS

The above report, which would occupy over twenty pages of THE JOURNAL-LANCET is ready for distribution today, and it should be read by every physician and surgeon in the country. It contains the addresses of the president, Dr. W. J. Mayo; of the retiring president, Dr. John G.

Clark, of Philadelphia; the reports of the Secretary-General, Dr. Franklin H. Martin, of Chicago; the presentation of the home of the College by Dr. Martin and its acceptance by Dr. Mayo; the report of the auditing committee; the report on Hospital Standardization; and the election of officers and regents.

We comment herein on the report of Mr. Bowman on Hospital Standardization.

No doubt the Secretary of the College will send the pamphlet to any medical man who applies for it.

WHY TEETH ARE BAD

Some people are born with good teeth, some people achieve good teeth, and some have good teeth thrust upon them. This paraphrase clearly explains the dental situation as it is today. It is well known among dentists and physicians that one person may have a perfect set of teeth who perhaps has never resorted to a tooth brush in his life; but, because of his constitutional superiority and the fact that he eats coarse, common foods requiring thorough mastication, his teeth remain good, and only through some misadventure in life, such as the advent of disease or other causes, has he any reason to consult a dentist. The reverse is also quite true, that a person who is born with good teeth and is instructed early in childhood in the care of the teeth, and assiduously carries out the instructions of the dentist, finds to his dismay that his teeth are going to the bad in young life. There must be some reason for this, and the probabilities are that the reasons are constitutional. Under the circumstances, no dentist is willing to take the entire responsibility for the cure of disabled or disordered teeth without the findings of the physician. As careful an examination of the patient for bad teeth should be made as if the diagnostician were hunting for an obscure malignancy, and even then the results of the examination are sometimes baffling, commonly so, perhaps; and yet, when one remembers that the human anatomy depends on many obscure chemical processes and also considers the probable physiological tissue-changes, the reason for bad teeth becomes evident.

Some of the other obscure causes of decayed teeth are due to abnormal tissue alterations within the mouth, not necessarily involving the teeth directly, but taking place in the vicinity of the roots or crowns. Inflammatory exudative disorders of the face and the region of the mouth

or nose are as liable to cause disorders of the teeth as is direct violence or direct infection. The same conditions apply to people who suffer from persistent or chronic kidney disorders, alternated pathological heart-states, or to the uncleanliness of the blood-stream, and to the fact that the inflammatory exudate or toxin, or infection—whatever it may be—reaches the root and canal of the tooth itself.

Pyorrhea (this word is bandied from mouth to mouth, perhaps transmitted from mouth to mouth) is so common that even the most illiterate man thinks he knows what pyorrhea means. The probabilities are, however, that pyorrhea is a pathological development from many of these obscure physical disorders. In some instances, doubtless, it is due to uncleanliness of the mouth and of the teeth, but here again the personal equation comes into the discussion. One patient has pyorrhea, another has recession of the gums, and a third may have abscesses at the root that account for the destruction of the dental organs. It is believed that 84 per cent of the population of the world have pyorrhea, and it is reasonable to assume that most of these people do not take the proper care of their teeth or of their bodies, hence the teeth decay, become loosened, or are extracted or filled, or, in a great many instances, are tampered with by dentists who believe in root and crown cleansing and filling of root and crown cavities. Some man has very ungraciously remarked that a good many of the bad teeth in the world are due to the interference of the dentist. This is hardly a fair accusation, because most people do not go to a dentist until they have shown some decided evidence of disease of the teeth, and then it may be too late for the dentist to rectify the errors that are responsible for the disease. The fact, too, that very much has been written on focal disease from infected teeth, not only calls attention to the diseased root, but complicates the theories upon which we base our conclusions. For many years there was a school whose members believed that any tooth which was dead or devitalized was under suspicion, and should be removed at once. The result was that a wholesale epidemic of extraction of teeth took place, and, much to the chagrin of the dentist or doctor, although the patient survived the operation, the disease from which he suffered was not cured.

Many instances are on record where minor disorders, such as pain in the back, pain in the muscles elsewhere, pain in the nerve trunks, and

continued increase of temperature, resembling the morning and night variations in tuberculosis, have been entirely cured by the extraction of an offending tooth or two, but this should not lead us to infer that this common variety of cure is a safe rule to go by, for there are an equal number of instances, perhaps, where the right tooth has not been found, and, although some suspicious teeth may have been extracted, there is one which is still offending and cannot be accurately determined. The *x*-ray of the teeth is a very valuable adjunct in diagnosis, but it is not infallible, as both doctors and röntgenologists have discovered. For instance, a diseased molar may present an outward appearance of health. An *x*-ray shows that the roots are still intact, and also the crown, but between the prongs of the molar there lies a large space in which the pus sack has been found, although it has not been demonstrated by the *x*-ray man. There are also numerous cases on record where people have suffered from chronic disorders due entirely to bad teeth, and doctors and dentists have advised the cleaning out of the entire cavity. Here again numerous instances have been recorded where prompt recoveries have taken place after the teeth were pulled and the focal infection cleared out.

The subject of bad teeth is a very interesting one, but it leads us into by-paths of speculation and we are not always sure of our ground. It is, like many other things in medicine, one of the debatable, speculative points for investigation, and probably will continue to be until we perfect our knowledge of the pathological mouth. The usual warning is hardly necessary, perhaps, but it may do no harm to repeat it, that the wholesale extraction of teeth is not always advisable. This matter depends entirely upon the physical condition of the patient.

MISCELLANY

RESPONSIBILITY OF PHYSICIANS FOR CANCER

It is a well known fact that a considerable proportion of malignant tumors are not recognized by the doctor when the patient presents the indefinite early symptoms of the disease. Optimism too often replaces a careful physical examination. The great majority of cancers of the rectum are today treated as hemorrhoids for from one to six months. Uterine discharges are often not properly investigated, and curettings are not examined. Cancer of the tongue and mouth is permitted to advance because there is a positive Wassermann.

Metastases are produced by repeated rough examinations. Malignant moles and epitheliomas of the skin are imperfectly removed. Clearly inoperable cases are operated on, thus bringing operation into disrepute.

These conditions call for a far keener appreciation of responsibility for the mortality from cancer than now generally exists in the medical profession. To collect and to make accessible to the physicians of this country the most fundamental and essential facts about cancer of the different organs and regions of the body is the object of this pamphlet.—*What We Know About Cancer.*

TWENTY-FOURTH SEMI-ANNUAL SESSION of the SIOUX VALLEY MEDICAL ASSOCIATION SIOUX CITY, IOWA

WEDNESDAY AND THURSDAY, JANUARY 21 AND 22, 1920
Headquarters and Sessions at Hotel Martin

WEDNESDAY MORNING SESSION, 9:00 O'CLOCK *Papers*

1. J. E. Reeder, M. D., Sioux City, Iowa, "Epidemic Mastoiditis."
2. R. M. Waters, M. D., Sioux City, Iowa, "Accidents During Anesthesia."
3. C. R. Mullong, M. D., Norfolk, Neb., "Blood Transfusion and the Results that May Be Expected."
4. Albert F. Tyler, M. D., Omaha, Neb., "The Injection of Gas Into the Peritoneal Cavity for Diagnostic and Therapeutic Purposes."
5. F. S. Clark, M. D., Norfolk, Neb., "Results of Some Experimental Work With the Use of Sodium Cacodylate on Athreptic Infants."

WEDNESDAY AFTERNOON SESSION, 1:30 O'CLOCK

1. Edward M. Williams, M. D., Sioux City, Iowa, "Consideration of Endocrine Influences."
2. D. T. Quigley, M. D., Omaha, Neb., "Etiology of Cancer."
3. G. G. Cottam, M. D., Sioux Falls, S. D., "The Problem of the Infirm Prostatic."
4. J. E. Summers, M. D., Omaha, Neb., "The Acute Abdomen, With Special Reference to Intestinal Obstruction."
5. Samuel C. Plummer, M. D., Chicago, Ill., "Surgical Shock."
6. J. P. Lord, M. D., Omaha, Neb., "The Preservation of Function in Joints After Fractures."
7. F. J. McAllister, M. D., Hawarden, Iowa, "Wound Repair."

WEDNESDAY, JANUARY 21, 1920, 7:00 P. M.

BANQUET AT THE HOTEL MARTIN, 7:00 O'CLOCK

Addresses

1. Colonel P. M. Culler, M. D., U. S. A., Hot Springs, Arkansas, "Medical Memories of the War."
2. Donald Macrae, Jr., M. D., Council Bluffs, Iowa, (Late Colonel M. C., U. S. A.,) "Who Won the War?"

Followed by toasts and addresses by other prominent members of the profession.

THURSDAY MORNING SESSION, 9:00 O'CLOCK

1. R. F. Bellaire, M. D., Sioux City, Iowa, "Value of

the Fluoroscope in Gastro-Intestinal Diagnosis." Illustrated by Lantern-Slides.

2. F. J. Plondke, M. D., Saint Paul, Minn., "Vaginal Drainage." Illustrated by Lantern-Slides.
3. W. H. Mick, M. D., Omaha, Neb., "Similarity of Emergency and Military Röntgenology."
4. W. E. Wolcott, M. D., Omaha, Neb., "X-Ray Interpretation of Bone and Joint Pathology." Illustrated by Lantern-Slides.
5. E. G. McKeon, M. D., Pipestone, Minn., "An Unusual Case."

THURSDAY AFTERNOON SESSION, 1:30 O'CLOCK

1. G. G. Moorehead, M. D., Ida Grove, Iowa, "Head Colds."
2. J. P. Dougherty, M. D., Sioux City, Iowa, "The Polya Operation, With Report of Case."
3. J. G. Parsons, M. D., Sioux Falls, S. D., "Myasthenia Gravis."
4. J. C. Hay, M. D., Laurel, Neb., "Diagnosis and Obstetrical Management of Breech Delivery."

MEDICINE A LA MODE

Pills and the Leech I sing, of earlier worth,

When Sawbones were a less instructed lot,
When drugs were grown on trees or dug from earth,
And the poor field of Medicine in its dearth

Was still a bare and black scene;
When pills were pills and Albroth Wright was not,
When no one bred bacilli in a pot
(A curious stew, to naked eye inert),

And, having called the net result a vaccine,
Inserted it in patients with a squirt!

O Turkey Rhubarb, Brimstone, Senna, Squill,
Names that should be on every infant's tongue,
What have they done with all those draught and pills,
Those simple cures for simple aches and ills;

Parrish, the thoughtful giver
Of blushing phosphates for anemic young;
Easton his syrup, and the produce wrung
From castor oil seeds culled in Asian lands?

All gone! The kindly cod still boasts a liver,
But do they use it? No. The cry is "Glands!"

And still more glands, what time the laymen gape

To see the levied tributes grow and grow;
Nor guinea-pig nor tomcat shall escape.
Nor yet the innards of the ancestral ape,

Whose glands are interstitial
And, like Medea's cauldron long ago,
Turn hoary eld all youthful and aglow.

Bring in more pigs and cattle, swell the crop—
A gland's a gland and must be beneficial—
Till every pharmacy's a butcher's shop!

—*Manchester Guardian.*

NEWS ITEMS

Dr. J. A. Roy has moved from Kensington to Argyle.

Dr. D. Lemieux has moved from Rolla, N. D., to Leeds, N. D.

Dr. O. M. Begstrup has moved from Rugby, N. D., to Beloit, Wis.

Dr. E. A. Warner has moved from Nevada, Iowa, to Montrose, Minn.

Dr. M. C. Sorenson has moved from Sioux Falls, S. D., to Blunt, S. D.

Dr. O. J. Fortun has moved from Mayville, N. D., to Grand Forks, N. D.

Dr. Martin Spellman has moved from Paynesville, Minn., to Calumet, Iowa.

Dr. Wilson Lancaster has moved from Sherwood, N. D., to Wahpeton, N. D.

Dr. A. T. Robertson has been reappointed physician of the Red Lake Indian Agency.

The American Röntgen Ray Society will hold its next annual meeting in Minneapolis in September.

Helena, Montana, will ask the next state legislature to authorize medical inspection in the Helena schools.

Dr. P. E. Gibson, of Des Moines, Iowa, has moved to Crookston, and become associated with Dr. W. H. Daniels of that city.

Dr. W. A. McEachern, of Superior, Wis., was the first doctor to enlist in war service from that city, and the last to return home.

Dr. Leon M. Boyd, of Alexandria, has returned from army service and resumed practice in eye, ear, nose and throat work.

Dr. H. J. Fortin, of Fargo, N. D., who recently returned from France, has become associated with Dr. C. N. Collander, of Fargo.

Dr. Charles Lyman Greene, of St. Paul, addressed the St. Louis County Medical Society at the December meeting, held in Duluth.

Dr. F. E. Harrington, epidemiologist of the U. S. Public Health Service, will make a survey of the Minneapolis Health Department.

Dr. F. E. Hufnail, formerly of Minneapolis, was married last month at Seattle, Wash., to Miss Rhoda Stewart, also of Minneapolis.

Bozeman, Mont., has given up its full-time health officer, and Dr. H. H. Judd, of that city, who held the office, will resume private practice.

Dr. O. O. Haraldson, of Watertown, S. D., has been appointed examiner for the Watertown District of the Government Bureau of War Risk.

Prohibition has made the Minneapolis workhouse almost tenantless, and it is now proposed to turn it into a hospital for incurables and epileptics.

The name of Dr. Thor Moeller, of Devils Lake, N. D., should be added to the lists of North Dakota majors given in former issues of this paper.

The Sioux Valley Medical Association will hold its mid-winter meeting in Sioux City, Iowa, on Jan. 21 and 22. The program appears on another page.

Dr. M. W. Roan, of Bismarck, N. D., who went to Chicago to have his eye treated after a hunting accident, will not be seriously affected by the shot lodged in his eye.

Dr. John H. Higgins, of Minneapolis, has returned from New York, where he has been doing post-graduate work in the New York Post-Graduate Medical School and Hospital.

The new army hospital at Fort Harrison, near Helena, Mont., will be open in a few days. Dr. A. J. Steinherdt, of the Federal Public Health Service, will be in charge of the hospital.

Dr. W. S. Hall, formerly on the staff of the medical school of the Northwestern University, of Chicago, has been lecturing in the Twin Cities before men's and boys' clubs on sex hygiene.

Drs. Norman, Dryden, and Kirsch, of Crookston, have organized the Crookston Clinic, and will occupy the remodelled second floor of the Wallace Block of that city for their headquarters.

Dr. W. J. Freeman, of Lead, S. D., has been appointed a member of the State Board of Health and Medical Examiners of South Dakota. Dr. Freeman and Dr. Alway are the new members of the Board.

The College of Physicians and Surgeons of Alberta, Canada, will discipline Alberta physicians convicted of prescribing liquor for other than medical purposes. The penalty is revocation of license.

Dr. S. D. Gausemel, of Kenyon, who has been in army service about two years, has become the associate of Dr. H. P. Sawyer, of Goodhue. Dr. Gausemel is a graduate of the University of Minnesota Medical School.

A Montana ranchman has given up stock-raising and resumed his practice of chiropractic. When the green pastures of the Montana prairies dry up the people of the state will furnish "green" pastures for the chiropractor.

Dr. F. R. Smyth, of Bismarck, N. D., is doing efficient health work locally, for the state, and for the Government. In the United States Public Health Service he has the disabled and sick sol-

diers to care for, and he is active in behalf of all sick poor.

Dr. W. J. Mayo's trip to South America, mentioned in our last issue, is made in the interest of the American College of Surgeons. Dr. Franklin H. Martin, secretary-general of the College, will be a member of the party.

Minneapolis is to have for her schools a moveable dental clinic, housed in an ambulance, that was a present to the Board of Education from the Elks Red Cross Society, which originally received it from the Elks Club of Minneapolis.

Dr. Willard C. Foster, of Casper, Wyo., died last month as the result of an auto accident, at the age of 46. Dr. Foster was a graduate of the Medical School of the University of Minnesota, Class of '02, and at one time was health officer of Manila.

Dr. Walter E. List, assistant superintendent of the Cincinnati (Ohio) General Hospital, has been appointed superintendent of the Minneapolis City Hospital at a salary of \$5,000 and maintenance. Dr. List is 33 years of age, and is a graduate of the Cincinnati Medical College.

Work on the Lymanhurst Hospital building, in course of erection in Minneapolis, has been discontinued until its plans can be changed. The following physicians will study the plans and make recommendations: Drs. L. B. Baldwin, J. W. Bell, Geo. G. Eitel, F. C. Rodda, and Max Seham.

The Douglas County (Wis.) Medical Society held its annual meeting in Superior last month. The address of the evening was given by Dr. Robert Olesen, of Madison, who spoke on "Health by Mail," which means a complete tally on diseases in the state and prompt notification of epidemics.

Dr. R. J. McAdory has just returned from New York City where he has been for some months in charge of a ward of the old Polyclinic Hospital, now conducted by the U. S. Public Health Service for disabled soldiers. He has gone to Bemidji to become associated with Dr. E. H. Marcum of that city.

Clinics, demonstrations, and lectures will be given at the University Hospital and laboratories of the Medical School at the University for alumni and other physicians all day Thursday and Friday of Automobile Show Week. This custom was established three years ago, but on account of the war the work was omitted last year.

The Watertown (S. D.) District Medical Society held its annual meeting in Watertown last month, when the following officers were elected for the current year: President, Dr. J. M. Hammond; vice president, Dr. R. M. Burlingame; secretary-treasurer, Dr. A. Einar Johnson; delegates, Drs. H. M. Freeburg and E. O. Giere. Dr. P. J. Preston, of Minneapolis, was a guest of the Society at luncheon.

Dr. A. T. Mann, of Minneapolis, who has been the secretary of the Western Surgical Association for many years, was elected president for 1920 at the annual meeting held in Kansas City last month; and Dr. Warren A. Dennis, of St. Paul, was elected secretary. Dr. E. P. Quain, of Bismarck, N. D., was elected a member of the Executive Council, and the following surgeons of this territory were elected to membership: Dr. A. W. Ide, Brainerd; Dr. Melvin Henderson, Rochester; Drs. W. A. Coventry and A. L. McDonald, Duluth; Dr. Robert Earl, St. Paul; and Dr. A. C. Strachauer, Minneapolis. Dr. Paul Sorkness, Fargo, N. D., was put on the honorary list on account of his health.

The American Congress of Internal Medicine in conjunction with the American College of Physicians, will meet at Chicago, February 23 to 28, 1920. The sessions will comprise daily clinical and laboratory demonstrations in many of Chicago's leading hospitals and teaching institutions. The evening gatherings will be addressed by men eminent in American medicine. One of the evening meetings will embrace the fourth annual convention of the American College of Physicians. Ethical physicians of the United States and Canada who are interested in the advancement of what is best in clinical and scientific medicine and its affiliated sciences are cordially invited to attend all sessions of the American Congress on Internal Medicine. The gatherings will be of great practical and scientific work. Hotel accommodations must be spoken for at once. Detailed information with regard to headquarters, hotels, clinics, scientific demonstrations, etc., may be secured by addressing Dr. Frank Smithies, Secretary-General, 1002 North Dearborn St. Chicago, Ill.

PRACTICE FOR SALE

A practice of \$5,000 to \$7,000 in a good town in the southeastern part of South Dakota, established twenty years, is offered for the price (\$600) of the office furniture if taken at once. Address 303, care of this office.

SUBSTITUTE PHYSICIAN WANTED FOR ONE YEAR

A young physician is wanted to take a doctor's practice in South Dakota for one year. State experience, from what school graduated, and salary wanted. Address 308, care of this office.

LABORATORY TECHNICIAN WANTS POSITION

A woman who has just completed a course of laboratory work in the St. Paul City Hospital desires a position in a hospital or physician's office as laboratory technician. Will go out of the city if required. Will begin work on moderate salary. Address 304, care of this office.

PRACTICE WANTED

A physician and surgeon just returned from France desires a good location or a partnership. Graduate of a high grade medical school, and can give the best of references. Will consider an opening in any of the Northwestern States. Address 311, care of this office.

PRACTICE FOR SALE

In a county-seat town of over 1,000 population on main line of railroad between St. Paul and Duluth on a beautiful lake. Fine country and improving. Nothing for good-will. Office fixtures and drugs reasonable. Am going south. Address 306, care of this office.

OPENING WANTED

A physician with excellent experience in general and emergency surgery, also general medicine, desires an opening in one of Minnesota's larger cities. Aged 39; married; best of references as to character and ability. Will consider contract or hospital work; partnership; association or good location. A reasonable investment will be made. Address 309, care of this office.

SALARIED POSITION WANTED IN MINNESOTA BY A PHYSICIAN

A physician and surgeon licensed in Minnesota wants a salaried position with a salary not less than \$200 a month. He is 33 years old; single; speaks English, Spanish, and Italian; has had one year in hospital work and considerable general work. Can give excellent references, and is now practicing in Minnesota. Address 307, care of this office.

PHYSICIAN WANTED

Kensington, a growing village in Douglass County, Minn., needs a physician, Scandinavian preferred. Territory is large and very rich, all collections practically 100 per cent. For any information desired, address E. T. Bjorklund, Kensington, Minn.

POSITION WANTED IN PHYSICIAN'S OFFICE

By a young woman of 23 who has been in a drug-store for a year and a half doing the prescription work and assisting a surgeon in his minor surgery in his office and hospital. Has a good education and can keep books and do typewriting, but not short-hand dictation. Will give the best of references. Permanent work wanted. Address 310, care of this office.

The thought behind
the tube—
"the patient on the table"



Not "good enough" but the best from every standpoint—
alone assures that degree of "Catgut Safety" demanded when
the patient on the table is "ONE OF MY OWN FAMILY!"

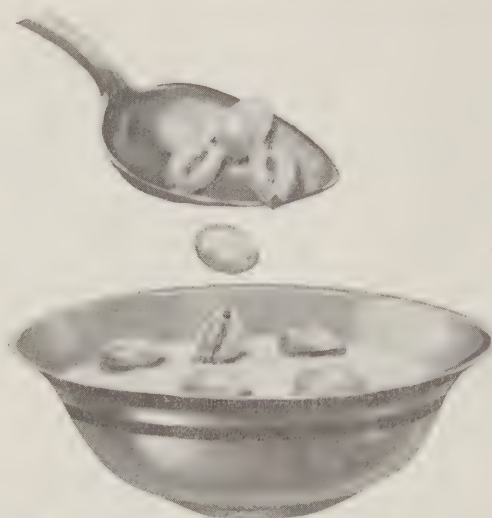
Only on this peculiarly personal basis is

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Steam-Exploded Wheat

Here is whole wheat, fitted, as never before, for easy, complete digestion.

The grains are steam-exploded—shot from guns. They get an hour of fearful heat—550 degrees. The moisture in each food cell is thus changed to steam.

When the guns are shot, that steam explodes. Each of the 125 million food cells is exploded separately. Thus every granule of the whole wheat is fitted to easily digest.

Ordinary cooking breaks but part of the food cells. This method breaks them all.

Puffed Rice is whole rice puffed in like way. Corn Puffs are pellets of hominy puffed.

Where ease of digestion must be considered, these are the ideal grain foods. They are also the most delightful grain foods that anyone ever tasted.

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Chicago

Puffed Wheat

Puffed Rice

Corn Puffs

PUBLISHER'S DEPARTMENT

JOHNSON & JOHNSON

There are a few houses whose names are accepted as an absolute guarantee by physicians that what they sell is as nearly perfect as such products can be made. If it is called a seven-to-twelve day catgut, it is exactly what the name implies, and nothing more or less. Such a house is that of Johnson & Johnson, of New Brunswick, N. J. It is known literally around the world, and its name on a label means excellence.

The house has made a specialty of the "Van Horn" line of Chromic sutures, K-Y Analgesic, and K-Y Lubricant, which are now accepted as the best of their respective kinds ever put up.

It is a great credit to the medical profession that the merit of their preparations has been recognized by medical men, well-nigh universally.

THE METROPOLITAN MILK COMPANY OF MINNEAPOLIS

In these days of profiteering, either through grossly increased price or reduction of quality, the milk supply of Minneapolis and St. Paul has not suffered unreasonably, and this has been due to the sense of justice of one or two large dealers, notably the Metropolitan Milk Company, which, several years ago, sought the co-operation of medical men in their efforts to maintain a high standard of all milk sold in the city. The com-

pany deserves great credit for such action, which made possible the efforts of our physicians to give our children as pure milk as is obtainable under conditions that cannot always be made perfect.

A WHOLESALE OPTICAL HOUSE FOR GRAND FORKS, N. D.

The Walman Optical Company, of Minneapolis, has opened a branch house in Grand Forks, N. D., in the Northwestern National Bank Building.

As manufacturers, importers, and jobbers of optical goods the Walman Company has done a very extensive business with medical men in the Northwest, and their growing business has made this branch, complete in every respect, a necessity if their service in that section is to be as prompt and efficient as their service in Minneapolis.

The company is an up-to-date old-fashioned service giver, making as many friends as customers, and never losing either a customer or a friend.

THE KENILWORTH SANITARIUM

The Kenilworth Sanitarium is a perfectly equipped institution for the treatment of nervous and mental patients. The building, inside and out, constitutes a home for the mentally and nervously sick that is no small part of successful treatment. The care given all patients by the attendants and the skilled physicians guarantees a cure in almost every case where a cure is humanly possible.

Kenilworth Sanitarium is located at Kenilworth, Ill., near Chicago, and it is a credit to medical science.

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*All other laboratory tests at
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Harris. \$25.00

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*Fee list and containers with
directions sent gratis on request.*

The National Pathological Laboratories

(Incorporated)

NEOSALVARSAN

The use of Neosalvarsan (Neoarsphenamino-Metz) is very widespread. In Belgian Congo, West Africa, is a mission of the Disciples of Christ. In this far-away country many of the natives suffer from frambesia or, as it is more familiarly known, yaws.

The head of the mission recently communicated with the H. A. Metz Laboratories, Inc., New York, acknowledging the receipt of a large shipment of Neosalvarsan, and said that the results in the treatment of yaws were little short of a miracle to the natives who frequently go to the mission and ask for "the medicine of the needle."

In many instances a single injection of Neosalvarsan has effected a cure. The mission physician also gives intramuscular injections of Neosalvarsan to small children suffering from yaws, with most satisfactory results.

Dr. Pierson, the mission physician, says that most doctors there see from 200 to 400 cases of yaws in a year, and that most of them can be cured by a single injection of Neosalvarsan, whereas, if it were impossible to obtain the drug, the cases would go on to the tertiary stage, with all its suffering, and many of the unfortunates would be doomed for life.

OCONOMOWOC HEALTH RESORT

The private sanatorium or health resort depends almost entirely for its support upon referred patients, which, as is very plain, means that it has a discriminating clientele in the medical men who refer cases to it, for one who sends a patient to a resort feels that his reputation is, in no small degree, at stake when he selects the

institution and the men who are to cure his patient. The long-continued patronage of high-grade physicians is the best testimonial to any institution or group of specialists.

The Oconomowoc Health Resort, at Oconomowoc, Wis., of which Dr. Arthur W. Rogers is the resident physician, has stood this severe test in the care of nervous and mental cases, and has stood it so successfully that it now ranks very high in the highest class of such resorts.

THE C. V. MOSBY COMPANY

The West, more specifically, the Middle West, is making progress so rapidly in all medical matters that one can hardly keep his bearings unless he changes his habit of looking to the East for the beginning and the ending of all things. By way of explanation of our meaning we cite both the quantity and the quality of the medical books published by a comparatively new house, the C. V. Mosby Company of St. Louis, Mo. Their announcements of their new books, made through the columns of THE JOURNAL-LANCET and other medical journals, show that the names of many of the best writers in the country appear on their publications.

The facts above stated are gratifying, but it is still more pleasing and significant that this house has encouraged new writers, and this encouragement has given the profession some of its best medical books whose authors are Western men.

Our readers, we are sure, will not overlook these facts, or fail to encourage this firm in their laudable efforts.

You Can't Treat a Patient Like a Test Tube

So called "antiseptic" or "germicide" solutions act differently upon mucous membranes than they do in vitro.

The best antiseptic solution for mucous membranes is the normal, unimpaired secretion of that membrane

IN CYSTITIS
IN VAGINITIS
IN URETHRITIS

ALKALOL

*In the Eye or Ear
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SOME NOTES ON THE PATHOLOGY AND TREATMENT OF ACUTE GONORRHEA*

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MINNEAPOLIS

The diagnosis of acute gonorrheal urethritis offers no great difficulties, but the identification of the gonococcus in a smear made from the discharge is essential and should always be made. In acute cases which are gonorrheal, the diplococcus of Neisser will be found in every case. In taking the history one must ascertain the date of exposure, for, in cases in which the discharge has appeared before the third day, one must be on the lookout for irritation discharges due to the use of prophylactic injections. The patient should always be asked whether or not he has used preventives; and, if so, what reagents were used. The ordinary injection offered is often too strong and causes irritation. Inquire about previous infections; what treatment was used; and whether or not the process was limited to the anterior urethra. Also ascertain the duration of the previous attacks, and inquire if complications were present. If the former case was posterior, be sure to ask whether or not the prostate was massaged.

The first step in examination is to make a smear from the discharge; then the lips of the meatus are inspected; their condition will be an index to the rest of the urethra. If they are everted, edematous, and very tender, we know that we are dealing with a severe infection, and must use great care in proceeding with endourethral therapy. Examine the dorsal lymphatic.

This too is only involved in the more severe cases. Palpate the anterior urethra throughout its length. You may find minute peri-urethral abscesses. The scrotal contents are palpated, but the prostate is not examined in acute anterior cases.

We next question the patient as to frequency of urination. If he is able to hold his urine for four hours, we have him report, with a four-hour specimen of urine in his bladder. This is passed into two glasses, passing about 250 c.c. into the first glass, and emptying the rest into the second. For ordinary purposes this test is sufficient to differentiate between acute anterior and acute posterior conditions. In the former the first glass will be cloudy, while the second will be clear; in the latter both glasses will contain cloudy urine. If, after this test, one is not convinced, he may do an irrigation probe. The patient is instructed to report with a full bladder; and the anterior urethra is flushed with a cold solution of 1-5,000 oxycyanide of mercury until the washings are perfectly clear, when the urine is passed into two glasses. If the washings are cloudy and the urine is clear, we are positive that the discharge is arising from the anterior urethra, while, if the urines are cloudy after the flushing, we know that the posterior urethra is invaded.

So much for diagnosis and examination of the average acute case. Chronic cases require a

*Read at the Thirty-second Annual Meeting of the North Dakota State Medical Association, at Grand Forks, June 24 and 25, 1919.

much more careful history and examination, but they will not be discussed here.

All rational therapy must be based on a knowledge of the pathology of the disease which we are treating. Due to the efforts of Ghon, Finger, and others, the pathology of the gonorrheal process is well understood. When the urethra becomes infected with the gonococcus, the germs are deposited upon the pavement epithelium of the fossa navicularis. This type of epithelium is not penetrated by the gonococcus, but growth takes place upon its surface, and very quickly spreads to the cylindrical epithelium of the anterior urethra. Here growth not only goes farther along on the surface, but the cocci penetrate between the cells, and growth proceeds in the interepithelial spaces, and finally penetrates the cubical cells of the lower layer in the submucosa. Growth of the bacteria separates the epithelial cells from their nutritional source. They degenerate and desquamate, while the toxic products of the growth produce an inflammatory reaction. There is an active hyperemia of the connective tissue; and through the porous walls of the dilated blood-vessels there are poured forth serum and polymorphonuclear leucocytes. This pus moves toward the surface, and the gonococcus invades the pus, so to speak, instead of advancing further into the deep tissues. Hence the pus is a protective mechanism, and its amount is an index to the extent and the severity of the infection. One of the early changes noticed in the submucosa is a diminution in the amount of elastic tissue. This is a very important observation, to which we shall refer under the subject of therapy.

In cases which progress favorably, the inflammatory reaction has reached its height, and begins to subside at about the third week after invasion, although a hyperemia may remain longer. The gonococci have been pretty well eliminated from the submucosa, and what remains of the epithelium takes on a reparative action, developing a many-layered epithelium in place of the destroyed cylindrical epithelium. The new epithelium is more resistant to penetration of the organism, but the bacterium may remain upon the surface of the newly formed epithelium and, as always, cause irritation and inflammatory secretion. At this stage, if there is any contra-indicated act, such as coitus, etc., on the part of the patient, or if the physician administers an irritating or too forceful injection, there will be an increase of the still present hyperemia with a subsequent increase in the exudation, and the

newly formed epithelium and slightly elastic submucosa will be stretched and torn by the exudation of pus and serum; and into these spaces the gonococcus can penetrate again, causing a repetition of the above outlined process, that is, a relapse occurs.

With repeated relapses, the mucosa acquires a tolerance to the toxin; does not react to such a severe extent, and, since less protective pus is produced, the gonococcus is not entirely eliminated from the deeper tissues. The chronic but milder reaction causes a proliferation of the connective tissues and infiltration of the mononuclear type of cells, which may organize into new connective tissue, which with age may contract, forming a so-called "stricture."

From this brief description of the pathology of the gonorrheal process, we note that our therapy must vary with the degree of infection and the stage of the process. Also that early reactions are similar to new infections, while later relapses require stimulating treatment.

We note that up to the beginning of the third week, the gonococcus is invading the epithelium and uppermost layer of the submucous lining, and that at this time the discharge consists almost exclusively of pus cells, gonococci, and a few epithelial cells. During this time the symptoms are also more acute, the secretion abundant, thick, and yellowish; there is some burning on urination; and painful erections occur. When in the second stage the gonococci have been carried to the surface, the symptoms begin to subside, and the secretion diminishes and becomes milky and consists of fewer pus cells and gonococci, but more epithelial cells. Then we know that reparation is under way.

In choosing a therapy we must be guided by the age of the infection, the severity of the reaction, and the circumstances and daily routine of the patient.

Type I.—We shall first take up the peracute type. This type is usually a first infection; the incubation period has been brief; and the subjective symptoms noticed early and are progressively more severe. The secretion is abundant, and the meatal lips are red, everted, and very tender. The dorsal lymphatic of the penis may be swollen, and the prepuce and entire shaft of the penis may be swollen and edematous. In this type of case, one must positively refrain from endo-urethral therapy until all signs of acute inflammation have subsided,—that is, about ten days or two weeks. Balsams or sodium salicylates are administered. The patient is put to

bed, if possible, and instructed to immerse the penis in hot water, or to use hot wet dressings almost constantly during his waking hours. This type of case frequently extends to the posterior urethra; therefore great care must be exercised in management, as well as in making a prognosis. Endo-urethral therapy, when instituted, follows the plan of Type 2, which we shall describe.

Type II.—This type is one of the most common types of acute anterior urethritis. There is an average incubation period of about six days. The discharge is moderate, and the subjective symptoms are not very troublesome—just a slight burning on urination. There is no swelling or edema. In the first stages here we use the antiseptic non-astringent albumin silver salts, such as protargol, argyrol, or albargin. We have found that protargol is probably as good as any of the others, is less expensive, and is cleaner. It should be used always in low dilution, one-fourth of 1 per cent is strong enough for the first week, while one-half of 1 per cent is sufficient for the second and third weeks. If these strengths cause burning, one may use one-eighth of 1 per cent to begin with. The directions for injection are important, and the physician should always take the pains and time properly to instruct the patient. The bladder is first emptied, then with a 15 c.c. soft-nosed hand-syringe, the anterior urethra is just comfortably distended with the warm solution, and is retained for five minutes by the watch. The injection should be made at rising (7 A.M.), in the afternoon (3 P.M.), and at bed-time (11 P.M.). This is important, for it gives the injections at about eight-hour intervals. The patient reports about every third day, at which times the genital organs are examined and a four-hour specimen of urine is examined by the two-glass test.

As soon as the discharge has greatly diminished,—that is, in about twelve days,—we begin gently to irrigate the anterior urethra with first 1-5,000 permanganate solution. On the day the irrigation is given, the patient omits two injections,—that is, he gives himself one injection in the morning, and receives the irrigation in the afternoon. If the irrigation is borne well, it is repeated the next day and the injection omitted. After several daily injections of permanganate, which have cautiously been increased up to 1-3,000, a 1-5,000 silver nitrate irrigation is substituted for the permanganate. The silver is then used every second or third day, and on the other days a mild permanganate irrigation is given. If there is very little reaction to the silver, it is

increased gradually up to 1-1,000, which irrigations are given every second or third day without any treatment in the interval, and, if the urine is clear, instillations are given, beginning with 0.25 per cent, gradually increasing up to 2 per cent with an interval which is estimated by the reaction. If the patient can bear 2 per cent silver and the reaction promptly subsides (within twenty-four hours) and the urines remain clear without treatments, we have reason to believe then no gonococci remain, and a cure has been affected.

The ability of a patient to withstand instillations of strong silver is the criterion for cure. The discharge may have disappeared, and the urines remain persistently clear with negative microscopic examinations before one has instilled silver; still the patient should be subjected to this “chemical” regime, for it is by far the best proof of cure. Then, too, the patient should report once weekly for several weeks after dismissal for observation.

Type III.—This type of case is the one of very mild reaction, in which the patient reports for treatment on the first day that he has noticed a symptom. The smear will then show a few leucocytes, loose gonococci, and a few epithelial cells. This type is immediately put upon anterior irrigations of 1-1,000 albargin in the morning and 1-3,000 oxycyanide of mercury in the afternoon. In favorable cases the urines will be perfectly clear after the first treatment. The mild irrigations are used for from seven to nine days, when mild silver nitrate is used, and the case put through to 2 per cent as outlined above. If this abortive type of cure is used for six or eight days and the urines are not clear, one should resort to the injection method. An “abortive” cure cannot be successfully carried out unless the infection is stopped before penetration has taken place.

In all acute anterior cases we use sandalwood oil, giving 15-minim capsules three times daily during the first two weeks. We think it is an aid, and have seen cases progress favorably with sandalwood preparations which promptly relapsed when the sandalwood was withdrawn.

I wish to mention the properties of a few of the chemicals suggested in the treatment of acute gonorrhea, and to state indications for their use.

The albumin-silver group.—From the pathology of the early weeks of gonorrhea we know that the drug of choice must be an antiseptic that will kill the gonococcus, but it must not be an astringent, for that will check the flow of

pus and prevent elimination of the gonococcus from the deep tissues. The silver-albumin preparations do not coagulate albumins, and are antiseptic and non-astringent, hence ideal reagents for the first weeks. Their antiseptic properties are not great and require a sufficient length of time; therefore they must be retained at least five minutes.

Protargol is used in one-eighth to one-half of a 1 per cent solution. It is ordered in double the strength desired, and then diluted with equal parts of warm (not hot) water, thereby giving a tepid solution for injection. Cold solutions cause a contraction of the urethra, and prevent all parts being bathed in the solution. Protargol occasionally causes stinging, and should then be more diluted. It is particularly indicated in acute anterior gonorrhea, where self-injection is the mode of treatment ordered.

Argyrol.—This is used in a 10 to 20 per cent solution. It must be freshly prepared, for it very quickly loses its antiseptic properties on standing in solution. It should never be used when more than three days old. Argyrol is the least irritating of the silver albumin salts, but it is so dirty to use and so expensive that we rarely ever order it for self-injection; however, we use it as an instilling medium in the early stages of acute posterior gonorrhea when it is deposited behind the sphincter with a Guyon catheter.

Albargin.—Albargin is very mildly astringent, and is particularly useful in attempting to abort an early infection. Then it is used as an irrigating fluid of 1-1,000 strength. As a hand-injection it is useful after the second week in 1 to 2 per cent strengths, used twice daily.

Permanganate of potash.—This is not an antiseptic in the strengths which the urethra will tolerate. It is an astringent, and as such serves a useful purpose. Many authors still cling to the Janet method of using from the onset permanganate irrigations. We do not believe that this is consistent with the pathology of the condition, and believe that permanganate has its place in the later stages when an astringent is indicated. It is used as a warm irrigation in strengths of 1-5,000 to 1-2,000.

Silver nitrate.—This dye is the sheet anchor in the later therapy of gonorrhea, and we believe that every case of gonorrhea, except where marked intolerance exists, should be subjected to silver therapy. Silver nitrate is an antiseptic-astringent and mild cauterant. It removes the superficial layers of epidermis, and, by causing an irritating effect, causes an outpouring of serum

and leucocytes which remove the deep-seated gonococci. The important point about silver therapy is, that a second treatment must not be given until the reaction of the preceding injection has subsided. Silver nitrate also imparts a property to the tissue cell which makes the cell resistant to the gonococcus. (Finger.) It is used as an irrigating fluid in strengths of 1-5,000 to 1-1,000 and for installations in strengths of 0.25 to 2 per cent.

Acriflavine.—This has recently been advocated by Davis and Harrell as an agent of choice in treating gonorrhea. They advocated anterior injections of 1-1,000 strength and instillations of 1-1,000 in posterior cases, and they report excellent results. We have given this drug a fair and thorough trial, and we are not able to duplicate their results; in fact, we cannot advocate the drug at this time, for our results were disappointing.

In closing I wish to advocate the greatest care and watchfulness in treating acute gonorrhea, for in the early uncomplicated cases a "cure" can be affected without damage to the sensitive physical and mental sexual apparatus. Gentleness is supreme. Mild solutions, carefully estimated intervals, and co-operation of the patient are essential, and can be secured if the physician will exercise the same skill that he does in handling other acute infections.

DISCUSSION

DR. F. R. SMYTH (Bismarck): I am very glad indeed to hear Dr. Michelson's paper. Dr. Michelson is a Bismarck product, and I have known his family for thirty or thirty-five years. It is gratifying from another source. One of the principal objections from many doctors is that, if the fight we are carrying on is successful, the gonorrhea patients will be driven to druggists for treatment. I have great respect for druggists, but I would like to see a druggist carry out the treatment Dr. Michelson has outlined. I know that Dr. Michelson has treated more patients a month than I have found in the whole State of North Dakota, and if he finds it necessary to follow out this outline in the treatment of his cases I think we need not fear driving these patients to the druggists. Most of us would be very glad if some of them would go to the druggists.

I only wish that Dr. Michelson's time and paper had been more extensive, for I have had more practical hints from his paper than I have known in the practice of medicine in a good many years, and I am sure we will all benefit by it. It has been extremely gratifying to me. I cannot discuss it for I accept everything he has said because I know the experience he has had.

DR. THOMAS MULLIGAN (Grand Forks): I think there may perhaps be others here who feel the same as I do in regard to the efforts the Federal Government and the State Government are making in the attempt to handle venereal diseases. I did not take very kindly to it at

first, thinking it might be an injustice to the patient, and perhaps also from a selfish standpoint, thinking we might lose some of our patients; but I have undergone a change of heart. In order to test this meeting in regard to what Dr. Smyth has undertaken I would like to offer the following resolution:

"RESOLVED, that the North Dakota State Medical Asso-

ciation heartily endorses the efforts of the United States Government to stamp out venereal disease, and pledges the assistance of its members to the State Board of Health of North Dakota in enforcing the law and regulations for the control of venereal disease in this State."

(Dr. H. E. French moved that the resolution be adopted. Seconded, carried, and so ordered.)

DIAGNOSIS AND TREATMENT OF NERVE LESIONS*

BY A. W. MORRISON, M. D.

MINNEAPOLIS

The numerous nerve injuries which have occurred during the war have materially enriched our knowledge of the diagnosis and treatment of such conditions. We may have a number of different types of injury due to wounds occurring both in war and in civil life.

Anatomically¹ there may be a complete or partial section with separation of nerve segments or else with interposition of cicatricial tissue; or there may be a tearing, crushing, or perforation with an interstitial neuroma, which may be total, central, or lateral; the nerve can be compressed by a strangulating fibrous band or callus; or contused, as shown by hemorrhagic or fibrous infiltration; and, finally, it may be irritated, which irritation is often caused by a fibrous hemorrhagic infiltration, although often the microscopic appearance of the nerve is normal.

When a nerve fiber is separated from its trophic center the peripheral portion degenerates, not sometimes but always, even though immediate suture be performed. This is an accepted and established fact, notwithstanding occasional statements to the contrary. Therefore, if a nerve be cut and immediately sutured no function can be expected in those parts supplied by this nerve until it regenerates,—that is, until a new axis cylinder pushes its way down from the central end of the cut nerve to the periphery. This is an important fact, for it influences our prognosis and treatment. After suture, nerve-regeneration has been found to progress at the rate of 1 to 1.5 mm. per day.²

Roughly speaking, about 20 per cent of wounded extremities show nerve injuries, and, in the order of frequency,³ the nerves injured are the musculospiral, ulnar, median, sciatic, external popliteal, brachial plexus, internal popliteal, anterior crural, and circumflex. In 25 per cent of cases of nerve injury of the upper extremity two or more nerves are involved, while

this occurs in less than 2 per cent of cases in the lower extremity.

It is by no means easy to determine the severity of a nerve lesion; in fact, it is never possible to differentiate absolutely between a complete anatomical and a complete physiological severance except by exposing the nerve, and it is only by repeated examinations and careful observations over a rather prolonged period that a diagnosis can be accurately arrived at. There are certain signs, however, which indicate a severe lesion. These are the complete and immediate paralysis of all the muscles below the lesion, accompanied by rapid and extensive atrophy of the paralyzed muscles, with marked loss of muscle tone. Associated with this is the complete R. D. (reaction of degeneration). Two to three weeks after the injury the affected nerve, and the muscles it supplies, rapidly fail to respond to the faradic current, and their hyper-excitability to the galvanic current becomes more marked, until we have the characteristic slow, worm-like contraction of the muscle, with or without reversal of the poles. Contrary to the common belief, the sluggish muscular response is a far more valuable evidence of degenerated muscle than is the reversal of the poles. The slowness of muscular response, even with stronger currents, becomes more and more pronounced until finally all electrical excitability disappears. This progressive disappearance is always a serious sign. The absence of any zone of hyperesthesia or paresthesia in the region supplied by the injured nerve and total anesthesia to cotton, pin-prick, and heat and cold, are also of considerable importance. An interesting phenomenon is Tinel's sign, commonly referred to as "D.T.P." (distal tingling on percussion). When a regenerating nerve is tapped below the point of injury there is a tingling sensation in the cutaneous area supplied by this nerve, and this tingling sensation is elicited at successively lower levels ahead of the

*Read before the St. Louis County Medical Association at Duluth, January 8, 1920.

regenerating axis cylinder. To elicit the sign, the nerve is slowly and gently tapped, beginning below the site of the lesion and progressing in a proximal direction. This sign is not of great value before operation; after operation it is much more significant, but may indicate only that one or more of the nerve fibers are regenerating. Macdonald⁴ says that a stationary zone of D.T.P. indicates an obstruction to regeneration; that irregularities in the distribution of D.T.P. show that some of the regenerating axis cylinders have succeeded in forcing their way through the fibrous tissue obstruction and that in a case of neuroma formation the tingling would have a distribution of only from 2 to 3 cm. The sign may be of use in multiple injuries, showing which of these injuries involves the nerve. Care must be taken in employing this sign that the extremity be kept motionless and no tingling be produced in neighboring nerves. In addition to the above findings, there may be certain thermal and vasomotor disturbances,—that is, a lowering of the local temperature and some edematous infiltration. The abolition of the secretion of sweat is of value when present, and it is almost always found in severe injuries to the median, ulnar, and sciatic nerves. The preceding comprise the more important findings of the syndrome of interruption.

The syndrome of dissociation comprises partial injuries of the nerves in which the paralysis is incomplete, and one finds a hypo-esthesia rather than an anesthesia, and the electrical responses show a partial and incomplete R.D.

The syndrome of irritation comprises painful injuries of nerves. Such injuries, the more serious being commonly referred to as causalgia, are caused only by incomplete lesions, and are practically limited to the median and internal popliteal nerves. They are characterized by pain of a burning, grinding character in the hand or foot, beginning from two to three weeks after the injury, and becoming more and more intense so that the patient, on account of the severe pain, becomes greatly run down and loses much sleep. These pains occur in paroxysms, and an attack may be brought on by the patient allowing the hand to hang down, by exposure to air, heat, noise, or light; or coughing and sneezing may be the exciting factor. Emotional causes soon become evident, and almost any emotion may start a paroxysm. One patient, I remember, objected to the nurse asking how he felt, because answering the question started his pain. Cold water often gives partial relief, and, as a

result, some patients develop a phobia to dryness, insisting that everything they touch or that touches the affected part shall be wet. After four or five months this pain begins gradually to diminish in severity. With the pain there may be some weakness in the muscles supplied by the nerve, but rarely is there total paralysis of all the muscles. This weakness is due, not only to the pain occurring on movement, but to actual paresis in one or more muscles. There are generally impaired sensation to cotton, heat, and cold, and increased sensitiveness to pin-prick, but deep pressure may relieve the pain. Perspiration, locally, is generally diminished, but may be increased, and the affected part is more slender, the skin being delicate white or pink and the nails convexed and pink. Trophic disturbances are quite characteristic and marked, such as dryness and infiltration of the skin, thickened, curved nails, infiltration of the muscles and contraction of the muscles, tendons, and aponeuroses, and fibrous ankylosis of the joints.

The syndrome of compression relates to lesions where the nerve is compressed by fibrous tissues or by a callus, and may present signs of either a complete or incomplete interruption. The paralysis of the affected muscles is more or less complete, and the atrophy quite rapid, but not as intense as in complete interruption. However, the muscle tone is, relatively, little impaired, and the sensory changes are not as marked or as fixed as when there is complete interruption. If there are feelings of formication present on pressure of the nerve it is an indication of partial interruption with the destruction and the consequent regeneration of some nerve fibers.

The syndrome of regeneration consists of the progressive reappearance of the functions of a nerve. Burrow and Carter⁵ state the first functions to recover are the trophic and vasomotor, trophic ulcers often healing with surprising rapidity. Tinel's sign, previously mentioned, can be elicited in from four to six weeks after the beginning of restoration; and as regeneration proceeds, tapping, farther and farther towards the periphery, causes formication. However, what is probably a still earlier sign is pain on pinching the skin in the sensory area of the injured nerve.⁶ This pain, which may be quite intense at times, soon has a tendency to spread to the paralyzed muscles. Next we note an improvement in the muscle tone, though the diminution of the muscular atrophy is far more tardy. It is usually stated that in about six weeks a pin-prick begins to be felt; and after about four months

this is much more marked, and cold is distinguished, and, after this, sensibility to superficial touch begins to return. However, Pollock,⁷ from a minute study of 520 nerve injuries, draws the conclusion that early return of sense of prick-pain before the return of sense of touch is not due to temporal dissociation of epicritic and protopathic sensibilities, but is due to the assumption of function by adjacent overlapping nerves, and that the early return of prick-pain alone cannot be interpreted as a sign of regeneration of the divided nerve. Generally, deep sensibility returns a little earlier than superficial sensibility. During the entire regeneration the electrical reactions are gradually modified; voluntary motor power precedes the return of faradic excitability of the nerves and muscles, but not constantly, and the electric excitability of the muscles occurs later than that of the nerve, but neither is this constant. The slowness of the contraction generally disappears completely only after the return of the first voluntary movements.

In examining a case of nerve injury, considerable care and patience must be exercised. To test epicritic sensibility, the part must be shaved, for the response which follows touching a hair is due to a deep sensation. Cobb,⁸ in a recent article, states that dissociated sensations in peripheral nerve lesions are due to artifacts, and that, for practical purposes, examining for one mode of sensation is sufficient for diagnosis. The attention and co-operation of the patient are most essential to secure accurate results. In testing muscle movements all attempts at movement should be performed from the zero position. Further care must be exercised in the analysis of muscle movement, for supplementary muscle movements are often confusing and may be caused by the anastomotic supply of muscles from adjacent nerves, as the result of mechanical factors and even the recoil of elastic tissue following a movement in a direction opposite to the one desired.⁹

As 60 per cent of nerve injuries, according to Tinel, recover spontaneously, we may ask, When, if at all, is an operation indicated? In answering this it should be borne in mind that complete interruption of the nerve fibers does not altogether exclude the possibility of their spontaneous regeneration without surgical intervention. There is a considerable diversity of opinion as to the advisability of early operation. Wilmes, Thoele, Borchardt, and Auerbach,¹⁰ advise early operation, if a history of infection does not prevent, but Auerbach waits three months after an

infected wound has healed. Carrel advises immediate suture of nerves in fresh injuries, as nerves resist infection well and their excessive retraction is prevented. Further, if a secondary operation is needed later, the severed ends of the nerves are more easily found. Nonne and Ferrand advise waiting from six to ten weeks, and Hoffman waits for a complete healing of the wound, and in fracture cases he urges a wait of from six to nine months. Stopford considers cases as surgical if there is no improvement after from four to eight months. Moynihan waits three months after healing in bone cases, and one month in other cases. Elsberg believes in operating fairly early, and lays greater stress on the symptoms of motor loss than on sensory changes. Speaking generally, it is advisable to wait from two to three months, and occasionally longer, before operation, and then to operate only when there are no signs of improvement or when the improvement is checked or there are retrograde symptoms. Therefore, it is only by repeated examinations and observation over a rather prolonged period, watching for any changes in the tone or motility of the muscles, observing subjective and objective sensory changes and variations in the electrical responses, that a decision can be reached; for, if a nerve will fully regenerate spontaneously, it is better to allow it to do so, as nerves are very susceptible to trauma and surgical interference may hinder regeneration. On the other hand, the longer the delay between the date of the injury and the operation the poorer are the functional results, they being quite successful the first year, only fair after the second, and rarely successful after the fifth.

In the meantime proper therapeutic measures should immediately be begun. One of the most important is the relaxation and protection from strain of the paralyzed muscles by a suitable apparatus. Under no circumstances is this to be deferred as an after-treatment, and should be continued until voluntary movement is resumed. The importance of preventing over-stretching of the muscles and tendons can hardly be emphasized too strongly, and a thorough knowledge of the anatomy of the muscles and nerves is necessary for proper splinting, an improper splint being almost as bad as no support at all; however, mild, intermittent stretching by movements of the joint upon which they act may be beneficial to the muscles, both by keeping the joint mobile and by preventing contraction of the muscles and aiding in maintaining their nutrition, and removing waste products. As soon as any

inflammatory condition disappears, passive motion, gentle massage daily, removing the splint if employed but seeing that the muscles are relaxed, and electrical treatment are indicated. By these procedures we aid in preventing or overcoming contractures and fibrosis of the muscles, tendons, and tendon sheaths. Care also must be taken to avoid overstretching of the paralyzed muscles and tendons by passive motion. It is probable that the most important function that electrical treatment subserves is in improving the contractility of the paralyzed muscle. (Tinel.) It aids in maintaining the muscle tone, but in no way actually hastens the regeneration of the nerve itself. The Bristow coil is the most satisfactory method of applying the faradic current, as it causes no discomfort to the patient.

As preliminary measures to massage, heat in the form of hot baths or baking-chambers or hydrotherapy, using hot packs or whirling baths, is most valuable. In addition, corrective exercises, resistive and assistive, should be begun as early as possible—at once in old cases with deformity. When recovery is beginning to be well established, the patient should still be kept under observation to avoid the overstraining of muscles and tendons.

What is advisable in pre-operative treatment is also emphatically called for in post-operative treatment, and should be begun soon after the operation. In case flexing of the limb is necessary to overcome loss of nerve substance, the extremity should be mobilized for six weeks. If the nerve is not shortened, then passive motion can be begun two or three weeks earlier.¹¹

Some points in the operative technic are of interest. In cases of complete division the neuroma of the central end and the pseudo-neuroma of the peripheral end are to be resected, and a careful approximation of the stumps performed. A nerve gap of as much as two inches may be overcome by moving the limb, but care should be taken to avoid rotation of the nerve, as regeneration is better when corresponding nerve-tracks are brought into apposition. The nerve ends should be held together, not too tightly, by epineural sutures passing through the sheath of the nerve, and also by perineural sutures which do not include the sheath, but pass through the trunk of the nerve avoiding the fasciculi.¹² These last sutures, the perineural, do away with any waste space into which blood or serum might filter and so form an excellent basis for further fibrosis and interference with the down-growth of the axis cylinders. If the nerve

gap is so great that it is impossible to secure coaptation of the nerve ends, the use of free nerve grafts, preferably autografts, gives probably the best results, some surgeons reporting from 65 to 70 per cent of successful results. Adson¹³ states that if the gap between the sutured ends be greater than 3 cm. it should be bridged by autogenous transplants of sensory nerve fibers or by fascial tubulization. Employing hollow tubes, such as agar-filled arteries and the like, has not many supporters. Liberation alone of a nerve is ineffective when there is a severe intraneural scar, and according to Tinel either suture or non-interference is indicated. With proper control of hemorrhage, a clean fascia or muscle bed, and proper after-treatment, adhesions are not very likely to return. There has been considerable controversy as to the employment of covering material over the suture line. It is probably best to employ none at all.

In the treatment of causalgia numerous remedies have been tried. Drugs for the relief of pain are most unsuccessful, as also are hot air, hot baths, electricity, or ethyl-chloride spray, though immersing the extremity in cold water often gives partial temporary relief. Freeing of the nerve or even complete section of the nerve at times has not given satisfactory results. Buzzard¹⁴ and others, in the more marked cases, recommend the injection of a few drops of 80 per cent alcohol, the relief often being quite remarkable, motor function, following the injection, returning in from six to eight months.

There is considerable discrepancy in reports of results following operation. Price,³ who had an opportunity carefully to follow many cases over a prolonged period and whose conclusions are most conservative, reports 10 per cent total recoveries, 24 per cent markedly ameliorated, 35 per cent ameliorated, and 29 per cent failures. Of the sutured nerves alone, 6 per cent recovered, 24 per cent were markedly ameliorated, 40 per cent ameliorated, and 30 per cent unimproved. Where the nerves were merely liberated there were 20 per cent recovered, 23 per cent were markedly ameliorated, 22 per cent ameliorated, and 35 per cent unimproved.

Stoffel¹⁵ found 30 per cent recovered more or less following operation, and the best results were secured in musculospiral lesions and the worst results in ulnar and peroneal injuries.

Spielmeyer¹⁶ had success in 23 per cent, improvement in 36 per cent, and was unsuccessful in 41 per cent of cases.

Delangiere secured excellent results in 66 per

cent, fair results in 23 per cent, and failures in 11 per cent. Adkin reports 73 per cent showed improvement, 17 per cent no improvement, and 10 per cent indefinite results.

The best operative results are obtained in these cases when liberation only of the nerve is needed. Under such conditions the improvement is often surprisingly rapid, with an ultimate complete recovery. In cases where surgical interference is indicated, but when there is doubt as to the kind of surgical procedure to follow, or when 50 per cent of the function of the nerve is lost, resection and suture give the best results.¹⁷

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THE POST-SANATORIUM CARE OF THE TUBERCULOUS

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The ultimate end of all treatment of tuberculosis, if we desire to control it, is to limit infection, and reduce the morbidity and the mortality. It has been wisely said that "tuberculosis is the price we pay for our civilization." We know the agencies concerned in its spread. They are cow's milk and human sputum. In the latter instance all are agreed as to the method of entrance of the infectious material, namely, by ingestion. In the former the question is still a debatable one.

It is quite generally conceded now that infections occur most frequently in childhood; and yet, when we consider the 75 to 90 per cent of those among our average civilized races who have suffered a tuberculous infection at some time in their lives, and over against these figures place the 10 per cent who have had, or will have, any recognizable clinical evidence of the disease, we realize that it requires something more than infection to produce morbidity or mortality.

Infection is not everything. Manifest tuberculosis is due to anything and everything that adversely influences health; therefore the treatment of tuberculosis, preventive and curative,

comprises the whole scheme of personal hygiene, and is the center of most of what is known as public-health effort.

The education of the public, and the whole public, to these very essential facts is a vital part of any scheme of treatment; it is, in fact, the greatest factor in it. A large proportion of the people have retained only the information of the communicability of the disease with the resultant fear of it. The bearing that proper housing, sufficient ventilation, normal nutrition, fatigue, worry, and incidental disease has in producing tuberculosis never has reached the people.

The present methods of treatment and control of the disease are the result of a gradual evolution built upon study and research. This evolution has brought forth the sanatorium idea of treatment and the well-developed system of follow-up work, which is very efficiently carried out in some localities and neglected in others.

During the stay of the tuberculous individual in the sanatorium the general public is protected, at least to some extent, by his isolation. When he is returned again to home surroundings the very measures which he has used while at the sanatorium to protect others are discontinued.

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When the discharged patient with positive sputum, as most of them have, starts out into the world to make his way again, his first thought is to protect his fellows, but the very means he uses to care for his infectious discharges points him out as a person to be shunned, and he soon finds himself out of a job. His next effort at employment finds him neglecting measures for the protection of others.

It is the knowledge of such treatment by the public that leads so many ex-patients to seek employment at the institution from which they were discharged. In the Minnesota State Sanatorium, at the present time, over 40 per cent of the employees are ex-patients, and they are giving value received in their work. In other similar institutions the percentage of ex-patients is even higher.

It is time to teach the public that tuberculosis is a chronic disease, having a strong tendency to arrest under favorable conditions, but subject to many relapses and exacerbations. This means that patients should be subject to more or less continuous nursing and expert medical supervision. Is it possible to expect that the patient will see, in all instances, that he gets it? Is it not wiser to provide some system of after-sanatorium oversight?

We have said that most of the patients discharged from sanatoria go out with positive sputum. The figures in our own institution substantiate the statement. For the eleven months ending June 30, 1919, 278 cases were discharged from the State Sanatorium. Of these, 167 had positive sputum. The annual reports of 13 of the 14 county sanatoria, Deerwood not being included, show that 385 out of a total of 731 cases had positive sputum upon their release.

At first glance this may seem to be a matter for criticism until the other side of the picture is shown. How about the cases upon admission? It is assumed that, if tubercle bacilli are found in the sputum upon the first examination, after the admission of the patient, they were there before. In other words, that the patients presented active, open cases of the disease before they were even in a measure segregated. Out of 343 patients admitted to the State Sanatorium, during the eleven months ending June 30, 1919, 130 acknowledged having positive sputum before admission. The last annual reports of 13 of the County Sanatoria show that, out of a total of 731 patients examined, 386 had tubercle bacilli in their sputum upon admission, although only 28 admitted having positive sputum previous to that time. In many instances, of course, there

had never been a sputum examination. We simply have to speculate as to the number of persons in any urban community going about with tubercle bacilli in their sputum. Some day when we know more of the manner of infection we can better appreciate the bearing of these facts.

A certain percentage of the discharged cases reach the stage of apparent arrest. Some of them never get beyond the quiescent stage, and will probably have positive sputum the rest of their lives. The chronic character of the disease and the tendency to frequent relapses are shown in no better way than by the numerous re-admissions to sanatoria from localities where efficient follow-up work is carried on.

Is it not safer for the public and wiser from the standpoint of the comfort and economic status of the patient either to increase and broaden the measures for after-control or to encourage the development of colonies for the tuberculous near to the established sanatoria?

The average cost of maintaining a patient in the sanatoria, at the present time, is over sixty dollars per month. Is anywhere near such an amount being expended upon the necessary follow-up work? Intensive follow-up supervision, both medical and nursing, must be carried out, especially in urban communities, if we expect efficient control.

The colony idea is the plan that is gradually evolving. It revolves around two essential factors,—institutional employment and occupational therapy. We have already spoken of institutional employment.

Two years ago the Advisory Commission of Minnesota introduced into the various sanatoria throughout the state vocational training as a means of diversion for the patients, and to aid them in taking the cure by making them more contented with their stay. It has already proven its worth in these two directions. In the Canadian sanatoria for the care of the returned tuberculous soldiers vocational training is placed next to medical supervision in its benefits to the patient. It is but a step from vocational training to occupational therapy. By a gradual evolution of effort industrial centers could be built up around the various sanatoria by developing and using the labor of the graduated, inactive patient. The kind of labor and the hours of work could all be carefully supervised and directed. Such centers could be made self-sustaining. They would serve as a means of trying out the apparently arrested case. Under present methods too often the stored-up health is soon lost, just as

an improvident person dissipates rapidly the monetary savings of years.

The colony idea is nothing new. We have but to study it in the evolution of the Trudeau Sanatorium at Saranac Lake, N. Y. The influence of the life and teachings of Dr. Trudeau permeates all treatment and control of tuberculosis upon this continent. In our tribute to Trudeau and the sanatorium which bears his name, have we not overlooked the fact that at Saranac Lake has grown up, naturally, an ideal tuberculosis colony which could well be patterned after in other centers?

In Saranac village the death-rate from tuberculosis, even among the children, is not greater than in communities of its size elsewhere. The people came to Saranac to take the cure, and, having regained their health, have chosen to remain and bring up their families and live out their lives. These people, by being under expert medical supervision, have demonstrated to the world that they can live out their lives, bring up families, and teach the great lesson that tuberculosis can be controlled.

Colonies have failed in the past because they were made to evolve around the one idea of an agricultural community. Most of the tuberculous patients come from cities, and from among people who are not trained to agricultural pursuits,

and have no liking for them. A combination of the industrial and agricultural colony, built up along natural lines, should be ideal.

The present methods of control seem thus far to be inadequate. Until patients come into the sanatorium before they have positive sputum we are not getting them early enough. So long as that condition exists we can find no reasonable excuse for detaining the quiescent case until the patient no longer has tubercle bacilli in his sputum. The best results will be attained only when we work for better control at both ends of the problem—when we begin to work against the disease instead of with it.

The tuberculous are impaired units of society, who are, under certain conditions, a menace to their fellows. They have come to that position, not as a matter of neglect wholly upon their part, but largely because of the violation of health laws by society at large. They are desirous of protecting others, of getting well themselves, and returning to lives of usefulness. They love life even more than those who have their health. They are more interested in the control of tuberculosis than any other group of the population. We should give them a chance. The control of tuberculosis is the greatest health problem of the age.

THE CONTROL OF MILK PASTEURIZATION IN THE SMALLER CITIES OF MINNESOTA*

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Health officials recognize the safeguarding of milk supplies as one of the important phases of their work, and it was largely through their efforts that the pasteurization of milk, now generally practiced throughout the country, was first adopted. It is universally agreed that efficient pasteurization is the most effective and economical method of rendering milk safe. The process was never intended as a substitute for lax or unclean methods of production, but its purpose is to overcome the dangers in raw milk, which even the most highly developed systems of inspection may not eliminate. Health authorities now recommend that market milk be pasteurized before being sold unless it is from tuberculin tested cows and produced and handled under conditions similar to those required for certified milk.

The advantages of pasteurized milk in a community and the value of the process from a health point of view depend largely on the methods carried out at each individual plant. The mere presence of a pasteurizing equipment in a milk-station, or the fact that the milk is labeled "pasteurized," is not always assurance that the product has been properly treated and is therefore safe. In order to pasteurize milk effectively, the proper rules for heating, holding, cooling, and subsequent handling must be strictly adhered to; and, in addition, the raw milk delivered to the plant should be produced and handled in a satisfactory manner.

In response to a large number of inquiries and requests, the Minnesota State Board of Health, in 1917, authorized its Division of Sanitation to investigate the present status of milk

pasteurization in the state in order to determine whether the process was carried out as a health measure. A detail study was made of the apparatus used at each plant, and of its efficiency from a mechanical, as well as a bacteriological, standpoint. The methods employed in handling the milk after it was pasteurized were also carefully investigated. It was found that milk was sold and labeled "pasteurized" in all but seven cities in the state with a population of 5,000 or more; and in these cities it constituted from 50 to 90 per cent of the entire supply. Investigations were made at thirty-two plants, and, in most instances, it was found that the method of pasteurization carried out had practically no significance from a health point of view. In five places milk was found labeled "pasteurized" where the dealers did not own any pasteurizing apparatus or were not attempting to subject the milk to any kind of a pasteurizing process.

This survey showed that the present method of milk-pasteurization, especially in cities where local control was not in force, was very unsatisfactory from a sanitary standpoint, and that pasteurization was used largely to advertise their product. The responsibility for this condition should not be charged against the milk dealers, for at that time the state and practically all the municipalities where investigations were made, had no fixed requirements governing the pasteurization of milk. The fact that it remained with each individual milk dealer to carry out the process as he saw fit, gave rise to many forms of misconception on the part of the public. It was found that the public conception of pasteurization varied from the conception of those who did not know the reason for applying the process to that of others who had absolute confidence in any milk that was labeled "pasteurized." The following statement made by a mother to our representative is a typical example of the danger from a health point of view of labeling milk pasteurized when it is improperly treated: "I have a family of five young children. I have read a great deal about the food value of milk and I thoroughly believe in feeding my children all the milk they can drink. Our milk is pasteurized as you will see by the label on this bottle so it is absolutely safe for them to drink." The plant from which this milk was distributed was equipped with apparatus that could not pasteurize milk that would be safe for human consumption, and the owner frankly admitted he carried on the process only during the summer months, and then solely to improve its keeping qualities.

The principal errors that were found associ-

ated with the pasteurization of milk in this state during the investigation are briefly summarized as follows:

1. Buildings that were improperly designed to house pasteurization apparatus.

2. Pasteurization apparatus that was incorrectly designed and constructed to bring the milk to the proper temperature and to hold it the required time to kill disease-producing organisms; and to prevent infection of the milk after pasteurization.

3. Operators of pasteurization-plants who did not understand the principles of the pasteurization process and the proper methods of operating and caring for pasteurization apparatus.

4. The absence of local ordinances and supervision to control the pasteurization and the subsequent handling of pasteurized milk.

In order to improve the unsatisfactory conditions mentioned, and to place pasteurized milk on a more definite basis in Minnesota, the State Board of Health has taken the following steps:

1. It has passed the following regulation defining the pasteurized milk and requiring the approval of plans and specifications on all new installations of pasteurization apparatus:

45 A. Pasteurized milk is hereby defined to be natural cows' milk which has been subjected to a temperature of not less than 145 degrees F. for 30 minutes and immediately thereafter cooled to a temperature of 50 degrees F. or lower. No milk shall be labeled or sold as pasteurized milk unless it has been treated in the manner above defined. No plant shall be installed for the pasteurization of milk to be sold for human consumption, nor shall any existing plant be (materially) altered or changed, until complete plans and specifications for the installation, alteration, or extension, together with such information as the State Board of Health may require, have been submitted in duplicate and approved by the Board so far as relates to its sanitary features.

In carrying out this regulation, the State Board of Health has investigated and made recommendations to correct unsatisfactory conditions in most of the pasteurization-plants located in cities not in Class I, the latter being governed and controlled by their local ordinances. This work has been carried on in co-operation with local authorities.

2. It has collaborated with the Division of Dairy Husbandry, Department of Agriculture, University of Minnesota, in establishing a course for training pasteurization-plant operators, with the view of ultimately requiring the licensing of milk-plant operators. This course was offered and carried out this year for the first time.

3. It has co-operated with the State Dairy and Food Department, the Dairy Division of the Department of Agriculture of the University of

Minnesota, and the State Live Stock Sanitary Board in preparing a proposed milk ordinance adaptable to cities in Minnesota not in Class I. This ordinance contains provisions for controlling both pasteurized and raw milk. This ordinance has the approval of the State Board of Health and the other departments mentioned. The following cities have passed this ordinance or are enforcing one similar to it: Faribault,

the milk supply placed under proper supervision:

The co-operation the State Board of Health has received from local officials and from the milk dealers has been remarkable. The public in general is fast acquiring an appreciation of the meaning of pasteurized milk and will demand that the process be satisfactorily carried out under proper supervision. The State Board of Health is ready to advise, supervise, and assist

Table I.—Bacteriological Results in Four Milk Pasteurization Plants During Original Investigations in 1918.

Plant No.	Bacteria per cubic centimeter					Bacteria in bottle before refilling**
	Raw Milk	Heated Milk	Held Milk	Cooled Milk	Bottled Milk*	
1	905,000	210,000	15,500	1,400,000	3,600,000	6,000
2	2,750,000	1,755,000	1,175,000	470,000	535,000	Sterile
3	1,200,000	440,000	8,500	.....	2,920,000	50,000
4	850,000	120,500	1,700	1,400	210,000	59,000

Table II.—Investigations at Milk Pasteurization Plants After Recommendations Offered in Reports of Previous Investigation Had Been Complied With.

Plant No.	Bacteria per cubic centimeter					Bacteria in bottle before refilling**
	Raw Milk	Heated Milk	Held Milk	Cooled Milk	Bottled Milk*	
1	690,000	190,000	5,900	10,600	14,500	3,300
2	3,200,000	275,000	1,100	2,100	30,000	220
3	44,500	22,000	8,300	12,500	20,000	120
4	6,050,000	440,000	8,000	11,100	12,800	1,200

*Pasteurized milk at the time of delivery to the consumer should not contain more than 50,000 bacteria per cubic centimeter.

**Bottles previous to refilling with milk should not contain more than 1,000 bacteria.

Crookston, Austin, Rochester, Moorhead, Wirona, Detroit, Albert Lea and Red Wing. It is under consideration at Brainerd, Mankato, Owatonna, Fairmont, and Northfield.

Table I shows the bacteriological results obtained in the various steps in the pasteurization process at four plants during the initial investigation, while Table II shows results obtained after the recommendations offered by the State Board of Health had been carried out. These results are quite typical of the improvement that can be made in the efficiency of pasteurization when the plant owners are correctly advised and

municipalities in the control of pasteurized milk so far as its limited appropriations will permit, but a large share of the burden must rest with the local community by establishing local control of the problem.

The medical profession can be of great assistance in any campaign to improve local milk supplies and especially in educating the public to the importance of a safe milk and its value as a food. Proper pasteurization is one means of obtaining a safe milk, but no milk should be labeled pasteurized unless the process is such as to provide a safe product for human consumption.

THE VENEREAL DISEASE CAMPAIGN IN RETROSPECT*

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MINNEAPOLIS

It is now approximately two years since the inauguration of the Public Health campaign for the control of syphilis and gonorrhea. At first, all efforts centered on the army, then on the army and community, and since the armistice on

*Read before the Seventieth Annual Session of the American Medical Association, Section on Dermatology, Atlantic City, June 9-13, 1919. Reprinted from the Journal of Cutaneous Diseases by special request of the Minnesota State Board of Health.

civilians almost entirely. The program became pretty well standardized and has been generally accepted over the country, although, as was to be expected, in different places different phases of the work were emphasized. In the beginning, many things were based almost entirely on theory. At this time it appears worth while to go over some items in the program, and to

attempt to draw some conclusions as to their value.

A great deal of attention was paid by the army and navy to law enforcement as regards prostitution, with the idea that it would have a marked effect in reducing venereal disease. In a paper read before this section last year¹ it was my privilege to present some figures compiled in San Francisco which were suggestive of the effect of law enforcement. It is now possible to present in the accompanying table figures covering a year's time.

EFFECT OF LAW ENFORCEMENT ON EXPOSURES AND INFECTIONS²

Month	Annual Rate for Cases of Venereal Diseases	Annual Rate for Ex- posure as Repre- sented by Prophylactic Treatment
1917—		
October	167.67	826.18
November	75.11	497.46
December	84.87	426.42
1918—		
January	40.51	251.02
February	45.74	331.13
March	53.14	264.77
April	37.73	218.03
May	19.15	162.19
June	17.77	155.69
July	18.39	165.90
August	6.84	151.48

In October, 1917, arrangements were completed for law enforcement in San Francisco. It was started in November. The number of prophylactic treatments may be cited as the number of exposures. The effect of cleaning up the streets and closing up open houses of prostitution is apparent in the marked reduction, in November, of the rate for both prophylaxis and disease. There was a continuous downward trend during the entire year in spite of the fact that the group of men grew constantly larger by several thousand, but the effect of law enforcement is noted by the immediate and marked drop. Another observation is of more than passing interest. Out of four judges sitting in police court on a rotating service, one was particularly reluctant to deal out jail sentences. He was on the bench in October at the beginning of the work; he came on again in February and March, and again in July. It will be noted that every time he came on there was an increase in prophylactic treatments or exposures, and in the

number of venereal disease cases. This table, the figures of which were compiled extremely carefully, is indicative of the effect on venereal disease of enforcement and of nonenforcement of law. It is quite obvious that with prostitution going on openly there will be more exposures, and just as with any communicable disease, the number of cases depends on the number of exposures. It is also of interest to note from this table that the amount of disease is quite constantly proportionate to the number of prophylactic treatments. This is indicative that it is rather a false premise to figure that one could disregard the number of exposures providing prophylaxis was taken. This observation was disconcerting to many army officials who saw no need of any repressive measures until they found that as the prophylactic rate for their command went up so also did the venereal disease rate.

It is now generally accepted that enforcement of law is sound public health policy so far as venereal diseases are concerned, and that no mistake was made in emphasizing this part of the program.

In connection with law enforcement has gone examination and detention or quarantine of prostitutes, and many communities have made much of this. It appears to the writer that the importance of this has been vastly overemphasized. Some boards of health have made great campaigns on this part of the program and have spent thousands of dollars on the temporary detention and treatment of prostitutes. Of course, theoretically with proper social service, each case was followed up, etc., and the woman supposedly did not go back to that life. From a practical standpoint it is quite obvious that a large part of the women who get into the courts are old and confirmed offenders. Of what great value, so far as disease is concerned, can a few weeks' treatment be, so far as reducing disease is concerned? Comparatively few of these women have active lesions of syphilis, although many give positive Wassermanns, but nearly all have chronic gonorrhea which is not to be cured in the average time they are held. I do not mean to say that this work hasn't a value, but it should not be overestimated. Its greatest worth, as carried on at present, is as an educational demonstration of the amount of disease among these people, and of their possibilities as carriers. The point to be emphasized is not the need of treating them, but of permanently putting them out of business as the only means of curbing their danger to health. Money spent in securing and

1. Irvine, H. G.: Syphilis and Venereal Diseases as a Public Health Problem. *Jour. of the A. M. A.*, vol. 71, pp. 1029-1033. (Sept. 28) 1918.

2. Statistics compiled by Lieut. Allison T. French, Sanitary Corps, U. S. Army.

supporting some sort of reformatory where prostitutes can be sent for indeterminate sentences, receive vocational instruction, and later be placed out under parole, will result in more constructive work and be more justified. At the same time, the feebleminded ones should be weeded out and put under permanent custodial care. It seems logical, therefore, that the medical care and quarantine of prostitutes should be only incidental and that money should be spent on the really constructive work rather than on the palliative.

Virtually every state has adopted some system of reporting. In fact, it was necessary that they do this in order to receive their share of federal money. It is quite obvious that in most states reports are not at all indicative of the amount of disease. Lack of reports means a tendency on the part of the medical profession to disregard law, to fail to grasp the social side of medicine, and to a certain extent a direct lack of co-operation in carrying on an important national movement. From available reports, Texas appears to be the only state which has secured reasonable returns as regards numbers. From September, 1918, to February, 1919, there were 24,477 cases reported, or approximately 5,000 a month; 9,444 syphilis, 13,412 gonorrhea, and 1,621 chancroid. Minnesota has averaged a little less than 700 cases reported per month over a corresponding period.³ It is interesting to observe that, according to statistics of the United States Public Health Service, of drafted men, Texas sent 11.02 per cent venereally infected; Minnesota sent 2.31 per cent. According to these figures Texas had about five times as much disease as Minnesota, so the reporting is at least somewhat indicative of the amount of disease. Most states are running from 200 to 1,000 a month, regardless of population, and most states are showing a gradual increase. It is likely that reporting will ultimately give us some worthwhile figures. Many physicians have commented on the uselessness of handling professional prostitutes and of the need of controlling clandestine prostitutes. With proper co-operation, reporting offers a big opportunity in this connection. Most report cards have a place for reporting the source of infection. If the profession would co-operate and make a reasonable effort, the source would be reported in a large percentage of fresh cases and most state boards of health have a social service department equipped to success-

fully handle this problem. We have attempted to emphasize in Minnesota the importance of this work, and our social service department is handling more than a hundred cases a month from information of this type secured from report cards. Many of the older men who have not kept informed as to modern social service possibilities, fail to realize the opportunity offered through the report system to hold or return delinquent patients. Reporting is undoubtedly a necessary and valuable part of the program, but there remains a great deal of educational work to do before it will be as worth while as it ought to be.

The educational work is a valuable item; it will no doubt react on different people in different ways. On some it will have a deterrent effect and possibly prevent exposure; on others it may not deter, but may bring them to early treatment or prophylaxis, and so prevent infection. On most people it will at least have the effect of giving them an idea of the need of early, continuous and adequate treatment, and it will no doubt assist materially in getting people to take treatment and to continue it. All of the work is undoubtedly having an educational effect on the profession. Many men are paying more attention to their cases and are making a decided effort to become better informed and to give their patients better service. If the educational work as related to the venereal disease campaign is carried on along broad general lines, it will have a considerable influence in bringing communities to see the great value of proper recreational facilities, employment bureaus, and the teaching of hygiene.

State laboratory service has been made an important part of the campaign in most states. This is a very valuable service, both to physicians and patients, but it must be properly safeguarded. Both physicians and laity still need education in interpretation of laboratory findings. When it is so easy for a man to take a specimen of blood and send it into the state laboratory, it is more than likely that many physicians will be diagnosing syphilis entirely on the Wassermann. Warning has been given on this point again and again in the literature, but experience indicates that it still needs to be emphasized. Physicians must remember that at best this test is not a specific one; many cases of syphilis show a negative finding, and just as long as there is no accepted standardized technic, false positives will also be reported. It is impossible for any laboratory to be sure of its findings when specimens are possibly taken in a haphazard fashion, delayed in

3. Venereal Disease Pamphlet No. 30, issued by the Treasury Department, the United States Public Health Service.

transit in heated cars from twenty-four to forty-eight hours, and presented with considerable hemolysis. Under the conditions of a public laboratory it seems to me to be a great mistake to report anything except positive and negative, or doubtful. A certain amount of leeway is absolutely necessary in doing many tests, and the condition of the specimen may be responsible for a partially positive or negative report. If the clinician is doing his own tests on his own patients there may be some value in graduated reports, but coming from a public laboratory they are dangerous. I have seen several cases recently in which a good deal of trouble was caused by reports of + or ++ Wassermanns, undoubtedly due to some condition of the specimen submitted or to possible slight error in technic. These cases were absolutely negative in history and clinical findings, and my own checked Wassermann tests were completely negative. Yet these patients had been told by the physicians submitting the blood and receiving these reports that they had syphilis, and must be treated. I have no doubt hundreds of similar cases are happening daily. This is an extremely serious matter and should demand immediate attention. We find the reverse also true. Just recently I had a case referred for diagnosis with a lesion in the roof of the mouth. This case had been under observation for several weeks, but as the Wassermann was negative no treatment had been given. An immediate clinical diagnosis of syphilis was made and neo-arsphenamin was given with prompt results. It was impossible to get a positive test in this case, but that didn't alter the diagnosis. However, the man now has a large hole in his hard palate which ought not to be there and probably wouldn't be if reliance for diagnosis had not been placed on the blood test. Cunningham emphasized last year the danger of relying on serologic cures. Wile has recently commented very pointedly on this same factor, and I believe it cannot be emphasized too much in view of the present increase in free laboratory service. Somewhat similar comments apply to the examination of smears for gonococci. Many men are sending in specimens and on receiving a negative report are telling patients they are cured. In chronic gonorrhea these findings are really worthless. So let me repeat, that in connection with our laboratory service, unless great care is exercised and the proper educational propaganda carried on, this service will result in more harm than good.

Nearly all states have distributed free arsphenamin and the value of this needs little comment. This makes it possible for any patient to get the number of doses needed instead of being limited to the number he could afford to pay for. In Minnesota we distributed approximately 3,000 ampules from June, 1918, to June, 1919. For the most part, this has gone to dispensaries and hospitals, although we have offered at all times to supply private physicians if no charges were made for services in giving it.

In addition to the regular dispensaries which have been organized to a considerable number during the past year or two, there is a great need for some sort of consulting or advisory clinic to which the private physician can send patients for examination for spirochetes or for gonococci, and for clinical diagnosis, and for a nominal fee can get expert opinions and suggestions for his patients. Something of this sort must be offered if we are going to secure for patients generally the advantages of early diagnosis and early treatment.

The emphasis that has been placed on the need for more dispensary and hospital facilities for venereal diseases was well timed and without doubt great good has been accomplished by this part of the program. The organization of hundreds of evening dispensaries is especially valuable and literally thousands of patients are now getting service at these dispensaries instead of self drug store or quack treatment. Five evening dispensaries were organized in Minnesota last fall and they now see nearly 300 patients at each session. There is, I think, one danger in this connection that ought to be stated; namely, that in the endeavor to get a large number of dispensaries started, the all important need of competent treatment will be forgotten. It can be said that there is no particular value in treatment unless it is good treatment and the decision should rest with trained men. It will be a sorrowful mistake for boards of health to think that any man can be placed in charge of these clinics and produce results. The treatment of syphilis and gonorrhea is still sufficiently complex to demand a specialist's service, at least in consultation.

As a whole, I think there is no question that great good has come from the campaign against venereal diseases. For its continued and further success there is needed greater co-operation of the medical profession, more educational work, both with physicians and laity, and a distinct need for trained men to take an interest and to place their services in some way at the disposal of the official agencies carrying on the work.

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HEALTH INSURANCE

The Hennepin County Medical Society, at its annual meeting on January 5th, listened to a very instructive paper read by its retiring president, Dr. Litzenberg, in which he spoke of the various means and legal measures which have been adopted, or may be adopted in the future, to protect the people, to provide for some of them, and eventually to watch over the whole.

The Workmen's Compensation law, which is in evidence in Minnesota, was framed by employers, labor leaders, and lawyers, but no physician was consulted as to its makeup, consequently the Workmen's Compensation Act is at times more or less embarrassing, and does not permit full justice to be done to the injured or sick man who is entitled to compensation, but is unable to procure what is his just due.

The natural and common insurance which is taken out largely, aside from life insurance, is accident insurance, and it has been shown that health insurance is apt to follow in its footsteps. But health insurance means either medical socialism or, as THE JOURNAL-LANCET, in a former issue, has called it "medical paternalism." Health insurance, however, is something that should be conducted under laws by a broad-minded commission, big enough to see all sides and to provide for all necessities. Very naturally this would take in, at least it should take in, first of all, physicians. If the politician is the framer of the coming health-insurance act it is hardly likely that the physicians will have first place. The argument is, that they are not very good business men and do not understand

financial conditions, and, therefore, are not prepared to advise as to financial matters. Nevertheless, they can advise and help in the framing of a health law. The business man, too, is keenly interested; and the laboring man will have a great deal to say. And the lawyer, with his technical knowledge of the framing of laws or constitutions will be very much in evidence. Therefore, we physicians should co-operate and act as an advisory body. It was suggested by the president of the Society, in one of his recommendations, that a health commission be organized to act as advisor in health matters. A commission that draws up health insurance must be made up of men who are in sympathy with the attitude of the welfare-worker and the general public; and when this problem comes to the front there will be much discussion along this line.

This health insurance matter must be developed slowly, not hastily, as has been done in other countries. Dr. Litzenberg, in his address, told of the conditions in Germany, where there are all sorts of provisions for health, accident, life, and old-age pensions, but he did not say, as has been known for some time, that there has been a great deal of objection to some of these forms of insurance for the reason that they have not worked out properly. The financial burden which has been on the shoulders of Germany for many years, was almost equal to the liabilities incurred by the war. Many people are indolent, mentally and physically. If they are sick or injured and find they can get a small pension from the country, they decide to live on the pension rather than get well and work. The people of Germany took advantage of this opportunity, and at one time nearly swamped the German government. Consequently, no haste should be permitted in this country in the presentation of health insurance. The speaker very aptly said that the socialist and his unwitting allies, the chronic social reformer, the superficial theorist, and the demagogue, will attempt to settle these questions for us, and will do so probably in the wrong way unless we make common cause with the saner elements in society, who will see that justice is done to the employer, the employe, the business man, and the physician.

A few years ago Lloyd George forced upon the British Isles a health law which was spurned by the medical men. They opposed it at every turn as being undemocratic, making the Government medical employe a mere unit in a machine who would soon lose his professional interests if his methods were determined by a health-insurance act. But, somehow, the law went through,

and a certain class of medical men finally acquiesced in the measure, and, later, as the problem seemed to work out better, other medical men became converts. It is a short step, now, for the British Isles to go from health insurance to the socialization of medicine, when these health-insurance doctors will be drafted into the government service just as army officers are, and made a part of the whole army scheme.

A NEW FORM OF SUICIDE

When an undertaker and a druggist get together on a composition that remotely resembles whisky, and contains a variety of poisonous compounds, the trip from the druggist to the undertaker, is not a long one, as was shown when two such genial souls recently mixed cocktails. One would judge from the number of deaths from this wood-alcohol compound that the undertaker had allowed a barrel or two of embalming fluid to trickle into the solution and that the druggist had dumped in most of his old, unsalable stock in order to enhance the "intent-to-kill" liquid.

The number of deaths occurring from this extraordinary drink has not as yet been determined. The East, however, has, apparently, suffered much more than the West, because they were nearer the source of supply. Although the authorities have taken into custody the manufacturers of this vile poison, there was enough of it scattered about to make the deaths widespread. To add insult to injury, or death, the price of this new and quick "embalming fluid" rose to something unheard of, and, evidently, the dispensers in the retail districts charged correspondingly for it. It is rather commonplace, perhaps, to remark that the people like something they know nothing about, while it is quite evident that they are willing to drink anything that has a "kick" in it; and it is easy for one to understand why so many people are willing to experiment with unknown fluids for the sake of a little stimulation. The explanation is, that these people who indulge their appetites in this way are either old, chronic drinkers, who have been cut off from the spring of supply, or are the mental defectives of the country, who drink and play and produce their kind.

It has been well advertised that wood alcohol under any name is poisonous, and the manufacturers and druggists are obliged to put a poison label on each bottle. This in itself ought to warn the common drinker that this sort of alcohol is poisonous and commonly fatal in its after-effects. We are told, however, by Dr. Reid Hunt, Professor of Pharmacology in the Harvard Medical School, that wood alcohol does not possess a

single property by which anyone except a chemist can distinguish it from ordinary grain alcohol. The odor, taste, and appearance of the poisonous and the pure alcohol are strikingly alike, consequently it is not strange that the wholesaler, the saloon-keeper, or the bootlegger can dispose of any quantity of impure alcohol.

As is usual in the case of poisons, some people can stand a good deal of punishment. There are men who can drink wood alcohol, within certain limits, without harm, but they simply differ from the ordinary man in that they are able to resist poisons as some animals do. The great majority of drinkers who experiment with wood alcohol die, and they die a very unpleasant death. Others become blind, even when they have consumed only small amounts. This is rather a strange thing, except that it is again the personal equation,—the individual who is lacking in resistance and is easily affected by poisons of any sort. Just why it should select that part of the brain which presides over vision is unaccounted for, except that many poisons seem to choose the optic nerves for their destructive activities.

Of course, the only remedy for this condition is to abstain from drinking unknown beverages that are in any way suggestive of an alcoholic content. It is one of the conditions which we must expect during the Government's attempt to enforce prohibition, and if wood alcohol comes under the Government ban some other combination of manufacturers will undoubtedly succeed in producing an equally or a less destructive intoxicating drug. It may be said with some degree of frankness that anyone who attempts to drink wood alcohol ought to pay a forfeit with his life, but some people are such evident idiots that they need government or civic protection; however, the number who die from drinking poisonous whisky is infinitesimal compared with the number of deaths through communicable diseases. We should not, therefore, be alarmed except for the industries and professions which need alcohol for manufacturing purposes. Perhaps the good example of the abstainer may spread over the United States in due time; but, while Canada is running wide open, with millions of gallons of good liquor in sight, the population of Canada may increase and that of the United States decrease temporarily. When prohibition really becomes firmly established, the visionary dreamer looks forwards to a Utopia which is beyond the possible dreams of man.

Boost a good thing along, refrain from that which is bad,—in other words, do not drink unless you know what you are drinking!

RATING OF STATE SANITARY CONTROL OF PUBLIC WATER SUPPLIES

Our readers will recall the strenuous opposition from private sources met by the Minnesota State Board of Health, Division of Sanitation, when it began, some years ago, to prevent the pollution of our streams to the obvious detriment of public health. The Board, however, persisted, and triumphed. Other state boards have met the same kind of opposition, and many of them succumbed; and now comes the unwelcome publicity that follows failures of such character.

The *Engineer-News Record*, of January 1, publishes the rating of the various states as to their sanitary control of the public water supplies; and Minnesota and Montana stand in the highest class, which is called *excellent*, while some of our sister states do not rank so high. The rating, which was made by the United States Public Health Service in 1919, shows seven states as "excellent," eight as "good," fifteen as "fair," eight as "poor," and nine as "very poor."

The figures indicate a rating based on a possible 1,000:

EXCELLENT—Ohio, 970; Massachusetts, 970; Kansas, 930; Minnesota, 910; New Jersey, 910; Rhode Island, 910; Montana, 900.

GOOD—Florida, 865; North Carolina, 855; Pennsylvania, 850; Louisiana, 850; Kentucky, 835; New Hampshire, 835; Maryland, 830; Illinois, 830.

FAIR—Vermont, 785; California, 775; Texas, 770; Connecticut, 760; Virginia, 760; Maine, 730; West Virginia, 730; New York, 710; Michigan, 710; Oklahoma, 710; Georgia, 695; Iowa, 660; Utah, 640; Wisconsin, 630; South Carolina, 615.

POOR—Alabama, 555; Oregon, 540; Indiana, 535; Nebraska, 480; North Dakota, 470; Arkansas, 470; Nevada, 430; Idaho, 420.

VERY POOR—Washington, 340; Colorado, 260; South Dakota, 250; Arizona, 225; New Mexico, 200; Tennessee, 160; Mississippi, 130; Wyoming, 110; Missouri, 10.

REPORTS OF SOCIETIES

MINNESOTA ACADEMY OF MEDICINE

The regular monthly meeting of the Academy was held on December 10th, Dr. Dennis, the vice-president, in the chair in the absence of Dr. Sweetser. The entire evening was devoted to

hearing case-reports and listening to the reading of papers.

Dr. Leavitt reported a case of hydatidiform mole, and Dr. Burch a case of hypophyseal tumor. Two papers were presented by Drs. Hamilton and Corbett, one dealing with nerve injuries and the other with nerve surgery. Not often does the secretary permit himself to comment on what is offered before the Academy; but in this instance he is only repeating what many others were heard to say—that the subject was discussed in a masterly way.

Twenty-two members and two visitors were in attendance.

TUMOR OF THE HYPOPHYSIS CEREBRI

Dr. Burch reported a case of hypophyseal tumor in a woman twenty-five years of age. For thirteen years she had complained of poor vision, but otherwise her health was good. She never had had any serious illness. An occasional attack of vertigo was the only thing she spoke of as disturbing, except that she could not see well. She had never menstruated, but no ill feeling was charged to this.

At twelve years of age her eyes were so bad that she had to quit school, and it was only after prolonged treatment with glasses and a collyrium that she was able to resume her studies. Examination showed a concomitant divergent strabismus of the right eye. The external ocular structures and papillary reactions were normal, and the media clear. Both optic nerves showed advanced atrophy, not retinal disturbances. There was a bitemporal hemianopsia, the field defect being more typical in the left eye; the contraction, however, was more marked in the right. In view of the history, the impaired vision, the optic atrophy, and the hemianopsia, a tentative diagnosis of a tumor of the hypophysis was made. The x-ray showed the nasal sinuses present and clear, the sella turcica much enlarged, and the floor thick and depressed.

Anterior lobe extract in 3-grain doses, t. i. d., was tried. At the end of a month the patient had gained a few pounds in weight, but otherwise showed no improvement.

On November 25, a right middle turbinectomy was performed, followed by sphenoidal puncture. The sinus proved to be of normal dimensions, except transversely; there was no fluid present, nor could any tumor mass be palpated. A radiograph picture, taken with a probe in position, showed the end of the probe touching the thickened floor of the sella.

A CASE OF HYDATIDIFORM MOLE

Dr. Leavitt reported a case of hydatidiform mole in a young woman pregnant for the first time. The patient was married in May. In June, July, and August she menstruated naturally, but missed the September period. In October she had a flowing spell that was thought to be a return of the menses, and for a short time she gave up the thought that she was pregnant. The flow continued at irregular intervals thereafter for a number of weeks, and her physician was consulted. In November, in addition to her gastric disturbances, which were unusually troublesome, she began to com-

plain of pain in the uterus. Both complaints grew progressively worse as the days went by.

When seen by Dr. Leavitt for the first time, her physician, Dr. John Kelly, stated that her anemia, which was quite apparent, was of long standing. The uterus was as large as a six-months' gestation, and very sensitive to touch. There was no bleeding at the time, but there had been considerable that day. No fetal movement had been felt at any time. On the day following, the pains continued with increasing vigor. A miscarriage seemed imminent. She was taken to the hospital. An attempt to dilate the cervix failed. The tissues were as unyielding as in the non-pregnant state. To add to the perplexity of the physicians, a good-sized sound could be passed more than eight inches into the cavity of the uterus without meeting resistance or bringing away blood or water. During the few days that followed, the pulse ran as high as 128, the temperature occasionally rising two or three degrees. Opiates were required to relieve pain. Nausea and vomiting were almost constant. The anemia became rapidly worse, and the patient could not sleep. Four days later several blood clots were passed, and in the night following she had what several physicians who saw her believed to have been an intra-abdominal hemorrhage.

The abdomen was opened the following morning, with the thought that a ruptured ectopic pregnancy would be found. Instead, both tubes and both ovaries were normal. An incision was made in the uterus, through which poured cysts of various sizes, varying from the size of a pinhead to that of a pea. How much in quantity came away or was removed from the cavity of the uterus could not be said exactly; but it was estimated to be fully two double handfuls. The endometrium was carefully sponged and the surfaces inspected. The uterus was closed with both interrupted and continuous sutures. During and following operation various measures were employed to combat the anemia, and, so far as the pulse was concerned, the patient left the operating-room better than when she entered. However, she never rallied, and died four hours later. (Specimen shown.)

F. E. LEAVITT, M.D.,
Secretary.

CORRESPONDENCE

WHAT THE GOVERNMENT WANTS TO DO FOR ITS INJURED AND SICK SOLDIERS

TO THE EDITOR:

All discharged soldiers, sailors, and marines who received injuries or contracted illness or disease in line of duty, and who are now suffering, the after-effects, are entitled to free medical attention and hospital or sanatorium care from the government.

The United States Public Health Service—Dr. H. M. Bracken in charge, 744 Lowry Building, St. Paul—is responsible for this care in Minnesota, North and South Dakota, and Montana. Contracts have been made with suitable hospitals and sanatoria and a large staff of physicians and experts has been appointed.

We find that many discharged soldiers are suffering for medical care because of lack of funds, and others

are paying for such care at serious personal inconvenience, and we are most anxious to have it generally understood that this is unnecessary, and that ample facilities are at their command free of charge.

While the government is willing to provide for every discharged man in this way, it is not willing to be held liable for unauthorized treatment by private physicians or care in a private hospital.

It would be a great service to the discharged soldiers if every physician could understand this situation, in order that he might report any case of a discharged soldier, sailor, or marine that comes to his attention, where there is the slightest chance that the disability is traceable to army service.

It is especially important, where hospital care is necessary, that the men should be officially examined and entered in hospitals authorized by the government.

Red Cross Home Service Sections (401 LaSalle Building, Minneapolis, and corner 4th and Market streets, St. Paul) understand exactly what steps must be taken to facilitate the man's examination by the Public Health Service staff, and it will undoubtedly expedite matters if the discharged men will report themselves to Red Cross Home Service, or if interested physicians will refer all cases that come to their attention to the Home Service Sections.

In a locality where there is no Red Cross Home Service Section, a discharged man should write himself, or, better yet, ask a physician to write, to the Public Health Service, stating his case and asking for instructions.

Any effort you can make to secure publicity to these facts will be greatly appreciated.

RALPH A. MARSH,
Secretary,
Department of Discharged Men.

Minneapolis, Jan. 12, 1920.

MISCELLANY

SIR WILLIAM OSLER'S CHARACTER

His influence was as much upon the moral life as upon the scientific enthusiasm of his pupils. In 1905 he gave at Harvard the Ingersoll lecture on Science and Immortality, confessing there his adherence to this long cherished hope.

Few men have ever equaled him in the power to inspire industry and research in other men.

He was twice married and by his second wife became the father, some years after their marriage, of a son who was the apple of his eye. One of the most entrancing pictures of Dr. Osler that my memory retains is of him and his small son playing cricket in his back garden at Oxford, Osler bowling to a small boy not much taller than the wicket. The death of his son in the recent war was a blow which Dr. Osler never got over. From that time until his death he never was quite himself.

At Oxford the hospitality extended by Sir William and Lady Osler—not only to all American physicians and medical students, but to all Americans of every kind—was almost incredible. Into and out of his house there was a constant stream of Americans, all of whom seemed to be his intimate friends. To all he and Lady Osler

gave themselves with a cordiality that seemed to have no end. This was possible because from the time of his removing to England he always took life comparatively easy: that is, he relaxed to considerable extent the furious activities of his American years. At Oxford his academic duties were few. He saw but few patients and settled himself swiftly and comfortably into the Oxford life. There, as in America, he knew more about local history than the Oxonians themselves and so became at once a powerful and permanent influence.

No one who has known him will ever forget his merry, dark eyes, his swift, alert movements, his constant flow of jokes and anecdotes, his warm, ready affection for his innumerable friends and acquaintances, his inexhaustible enthusiasm in medical scholarship, his steady honesty, and his hatred of sham and pomposity. An influence such as his never dies out, for it is implanted in the lives of those who loved and followed him, and through them extends from generation to generation.—R. C. Cabot, M.D., in *N. Y. Evening Post*.

A GRACIOUS NEW YEAR'S GREETING FROM A MEDICAL MAN TO THE CITIZENS OF DULUTH

Dr. O. W. Rowe, of Duluth, honored himself and the medical profession when he sent, as president of the St. Louis County Medical Society, the following greeting to the people of Duluth:

A happy, healthy, prosperous New Year is the wish of the St. Louis County Medical Society for the people of Duluth.

We feel that the community is to be congratulated on the present health conditions. While our mortality and morbidity statistics were unfavorably influenced by the fire of last year and the influenza epidemic, we have so far missed the second wave of influenza which so many wiseacres promised us and so have cause for congratulations.

Medical science has made great progress during the year. Surgery has made great strides during the war and we are confident that the present rate of progress will continue.

One of the most interesting signs that the physician notes is the increasing interest in prophylaxis. Rather than waiting until ill, before consulting a physician, an increasing number of people are now interesting themselves in their present condition and seeking advice as to how to live in order to maintain their health. It is the hope of the medical profession that this number will increase. The future health of our people will depend largely upon how much interest is devoted to this subject.

Among the most potent factors in prophylaxis are the infant welfare clinics of Minnesota. These are no longer limited to large centers; even the smallest villages throughout the state are visited by specialists who make examinations and give advice on general hygiene, feeding, and, where it is necessary, refer the babies to the family physician for treatment.

In Duluth, the Masonic Infant Welfare clinic is now open continuously throughout the year. Three clinics are held each week at various points in the city. An in-

creasing number of mothers are bringing their babies to these clinics with excellent results.

A free orthopedic clinic at St. Mary's Hospital has been recently organized for the care of crippled and deformed children.

We feel that the city is to be congratulated on the present health department. Our health commissioner's handling of the recent diphtheria epidemic is especially praiseworthy. Such efforts are, however, a small part of his work. Too much praise can not be given to that branch of his department which handles our milk inspection and has made the milk supply of Duluth the envy of the state.

DANGERS OF INFECTION FROM VARIOUS COMMON ARTICLES CONTAMINATED BY TUBERCLE BACILLI

Lawrason Brown, S. A. Petroff, and Gilberto Pesquera, of the Trudeau Sanatorium, report the results of inoculation into guinea pigs of various substances and washings of objects that are ordinarily presumed to be contaminated with tubercle bacilli. Dust collected by a vacuum cleaner from the rug of a living room in the sanatorium was negative; swabbings from the mouthpiece of the sanatorium public telephone were negative. Washings of spoons, forks, glasses and cups, that had been used at meals by patients and had not been cleansed were positive; those of knives and dishes were negative. Washings of the hands of patients who had coughed upon their hands were positive; those of the hand of a second person who had shaken hands with a tuberculous patient and those of a door knob rubbed by a contaminated hand were negative. Saliva collected from patients just before coughing was positive. Patients with positive sputum-kissed Petri dishes: washings of the dishes kissed immediately and ten minutes after coughing were positive; those, twenty minutes after cough, negative. The wash water of a tooth brush was positive; as were the fly specks of flies fed on tuberculous sputum.—*American Review of Tuberculosis*.

NEWS ITEMS

Dr. C. A. McDonald has moved from St. Paul to Traverse City, Mich.

Dr. E. N. Layton has moved from Great Falls, Mont., to Colfax, Mont.

Dr. E. G. Steele has moved from Williston, N. D., to Plentywood, Mont.

Dr. J. H. Rishmiller, of Minneapolis, has gone to Florida for a brief outing.

Dr. O. W. Wheelock has moved from Ree Heights, S. D., to Miller, S. D.

Dr. L. M. Keene, of Alexandria, was married to Mrs. M. M. Soper, of the same place, last month.

Dr. Guy T. Haywood, of Forsyth, Mont., was married last month to Miss Ethel Drake, of the same city.

Dr. H. J. Shelver, of Appleton, has joined the Clinic of Drs. Bolsta, Karn, and O'Donnell, of Ortonville.

Dr. W. E. Larsen, of Bemidji, was married on Christmas day to Miss Emma Hoaglund, of St. Croix Falls, Wis.

Dr. D. J. Donohoe, of Silver Bow County (Butte), Montana, has been reappointed county physician.

Dr. M. W. Smith, of Red Wing, has been appointed a medical examiner of the U. S. Public Health Service.

Dr. Paul J. Preston, of Minneapolis, has become associated with Dr. H. M. Freeburg, of Watertown, S. D.

Dr. H. C. Parsons, of Watertown, S. D., it is reported, will probably be a member of the next senate of that state.

Dr. H. P. Nachtwey, of Dickinson, N. D., has been appointed health officer of that city to succeed Dr. H. A. Davis, resigned.

Dr. E. A. Sweet, of Montana, who entered the war service as lieutenant and became a major, has begun practice at Deer Lodge, Mont.

Dr. S. S. Shannon, who recently moved from Barnum to Crosby, has been appointed surgeon of the N. P. Railway for the Cuyuna Range.

Dr. L. W. Allard, of Billings, Mont., has been taking a course of postgraduate work, in New York, in the treatment of crippled children.

Dr. J. A. Regner, who formerly practiced at Wahkon and recently has been practicing at Lafayette (Minnesota), has moved to Hannibal, Wis.

Dr. A. S. Pendleton, of the U. S. Public Health Service, is stationed at Fort William Henry Harrison, at Helena, Mont., to take charge of the mental cases.

Dr. J. J. Sippy, epidemiologist of the Montana State Board of Health, says smallpox, and scarlet fever in a mild form, are more prevalent in the state than for many years.

The physicians of Stillwater have organized the Stillwater Medical Society, with the following officers: President, Dr. W. E. Caine; vice-president, Dr. O. S. Watkins; secretary Dr. G. E. Clark.

Dr. George M. Crabb, of Deer Lodge, Mont., is to move to Mason City, Iowa, where he will practice hereafter. The citizens of Deer Lodge gave Dr. Crabb a complimentary farewell dinner last month.

Dr. L. H. Huber has moved from Wolf Point, Mont., to Livingston, Mont. Dr. Huber spent the most of last year in postgraduate work in New York in his specialty, eye, ear, nose, and throat work.

Dr. A. B. Kirk, of Chisholm, will make California his future home. Dr. Kirk founded the Rood Hospital, one of the best known hospitals of Northern Minnesota, and has always had a large practice.

The physicians of Brown and Redwood Counties have applied to the Minnesota State Medical Association for a new charter, having lost the charter of the old society on account of the Dr. Fritsche affair.

Dr. A. J. Button, of Mowbridge, S. D., has sold his hospital in that city to Mrs. Christine Aboya, and will retire temporarily to farm life. He has practiced medicine and surgery for twenty-three years.

Apparent indifference to quarantine regulations has resulted in an epidemic of smallpox at St. Paul Park with over one hundred cases. The State Board of Health notified the village officials that the epidemic must be checked.

Dr. W. H. Hill, of the Minnesota Public Health Association, is the author of a new work on sanitation, entitled "Sanitation for Public Health Nurses." It is issued by the Macmillan Company, well-known publishers.

Dr. Gottlieb Oppliger, formerly of New Ulm, died on August 9, 1919, of pneumonia, at the age of 57. Dr. Oppliger was born in Berne, Switzerland. He graduated from the Medical School of the University with the class of '95.

The Health Department of the City of Minneapolis reports that the decline of tuberculosis in the city in 1919 was 10 per cent from the number of cases in 1918. The decline is credited to improved health conditions in the city.

The Western Montana Medical Society met in Missoula, Mont., last month, when the following officers were elected: President, Dr. H. B. Farnsworth, Missoula; vice-president, Dr. J. P. Ritchey, Missoula; secretary-treasurer, Dr. J. D. Hobson, Missoula.

The Women's Community Council of Minneapolis has appointed Miss Josephine E. Gilbert, formerly of Glencoe, director of the Minneapolis nutritional clinics. Miss Gilbert has taken extensive courses in nutrition and dietetics at Eastern institutions, especially at Columbia. The work is carried on in six clinics.

Dr. Nellie O. Barsness, of St. Paul, has returned from France, where she served as an eye specialist in a hospital, treating patients suffering from the effects of gas. Her experience thoroughly convinced her of the inhumanity of the use of gas in warfare.

The physicians of Billings, Mont., have organized a society, called the St. Vincent Hospital Staff, to prevent unnecessary surgical operations, and to elevate the standards of the hospital. Practically all of the physicians of the city belong to the organization.

When the news of the death of Sir William Osler reached Rochester, the staff of the Mayo Clinic held a special meeting in memory of this distinguished medical man. Both Dr. W. J. and Dr. C. H. Mayo spoke on the different phases of Dr. Osler's life, and touched upon his influence in the development of modern medicine.

The "Till Institute, Inc.," is the name of the new device which will enable the notorious John Till, of Wisconsin, to continue to practice plaster medicine. In order that our readers may refer patients to the Institute, Inc., we will add that it is located at Turtle Lake, Wis., not a long distance from St. Paul and Minneapolis.

At the last meeting of the Black Hills District Medical Society of South Dakota, held at Deadwood, S. D., the program was made up of eleven clinics in the St. Joseph Hospital of that city by the members of the staff, covering a series of very interesting operations which proved of great interest and large profit to the members of the Society.

Dr. F. E. Harrington, of the United States Public Health Service, has begun his health survey in Minneapolis, acting as City Health Commissioner with the large authority given health officers by our city and state laws. His work will extend over several months. He comes here with a reputation for doing things, useful and tangible, in public-health work.

Dr. Walter E. List, the new superintendent of the Minneapolis City Hospital, is expected to begin his work today. Dr. List comes to the city with an experience in his line of work and an educational and temperamental equipment that promise eminent success, but this can be prevented by the politicians if they really set out to accomplish such diabolical work.

The Crewe Sanatorium at Rochester has been incorporated with a capital stock of \$250,000, and the Company has already selected a beautiful site on which to erect a new sanatorium building

with 75 rooms for the Cascade Sanatorium, of which Dr. J. E. Crewe is the medical director. The new enterprise is backed by well-known men, including J. H. Kahler, of the Kahler Hotel.

The President of the North Dakota State Medical Association has made the following committee appointments: Committee on Arrangements,—Dr. R. W. Pence (Chairman), Dr. E. M. Ransom, and Dr. A. D. McCannel; Scientific Committee,—Dr. A. J. McCannel (Chairman), Dr. P. A. Nestos, and Dr. F. A. Brugman. The annual meeting will be held at Minot on June 15 and 16.

The seventh annual meeting of the Sioux Valley Eye and Ear Academy will be held at Hotel Martin, Sioux City, Tuesday, January 20. A fine program has been arranged for the afternoon, and in the evening following a "get-together" supper. Notable papers will be presented by Drs. G. F. Suker and A. H. Andrews, of Chicago; Profs. L. W. Dean and C. C. Bunch, of Iowa City; Dr. H. Gifford, and many of the members of the Academy. There will also be the annual reports and election of officers.

The Huron (S. D.) District Medical Society held its annual meeting in Huron last week, when the following officers were elected for the current year: President, Dr. Benjamin Thomas, Huron; vice-president, Dr. J. C. Shirley, Huron; secretary-treasurer, Dr. L. N. Grosvenor, Huron; delegate, Dr. E. B. Taylor, Huron; censor for three years, Dr. Earl Crafts, Carthage. The subject for discussion was "Obstetrics," and drew out extended remarks and interesting experiences.

The American Red Cross wants a limited number of physicians for relief work in Europe and elsewhere. Preference will be given to men not over thirty-five years of age who have had experience in army or navy service, and the requirements as to educational qualifications, health and character will be the same as those for entrance into army or navy service. Contracts will not be made for less than one year, except under special conditions. Information may be had of Dr. L. B. Baldwin, Superintendent of the University Hospital, Minneapolis.

The Upper Mississippi Valley Medical Society held its annual meeting at Brainerd on Jan. 6. Papers were read by Dr. E. H. Marcum, Bemidji; Dr. Paul Kenyon, Wadena; Dr. P. W. Giessler, Minneapolis; Dr. W. L. Mattick, Deerwood; Dr. P. M. Hall, State Sanatorium; and Dr. Rood Taylor, Minneapolis. Officers were

elected for the current year as follows: President, Dr. O. E. Bratrud, Warren; vice-president, Dr. R. L. Kirsch, Crookston; secretary-treasurer, Dr. H. M. Blegen, Warren; delegate, Dr. O. F. Melby, Thief River Falls.

The Hennepin County Medical Society elected the following officers at its annual meeting held last week, the vote being taken by mail: President, Dr. J. Frank Corbett; first vice-president, Dr. A. W. Morrison; second vice-president, Dr. F. L. Adair; Executive committee,—Drs. A. E. Benjamin and G. D. Haggard; censors,—Drs. W. E. Rochford and A. N. Bessesen; trustee for unexpired term of Dr. A. W. Hall, deceased,—Dr. G. D. Head; trustees,—Drs. A. W. Abbott and W. A. Jones; delegates,—Drs. F. L. Adair, J. W. Little, C. W. Pettit, and J. W. Bell; alternates,—Drs. M. J. Lynch, Hugh Wilson, Ralph Knight, and E. L. Gardner.

The Regents of Education of South Dakota met at Sioux Falls on January 6 for the purpose of discussing ways and means for establishing a Department of Postgraduate Teaching in Public Health Work for graduate nurses. Some months ago Dr. F. A. Spafford, a member of the Regents of Education, had been instructed by them to see what could be done along this line. After extensive correspondence, he made his report at this meeting, which was to the effect that such a course could and should be established. There were present at this meeting, in addition to the Regents, Mrs. Bessie A. Haasis, of New York City, Educational Secretary of the National Organization of Public Health Nursing; Miss Clara Ingvalson, President of the State Board of Nurses; Mrs. Elizabeth, Secretary of the Board; Dr. Robert L. Slagle, President of the State University; Professor C. P. Lommen, Dean of the Medical Department of the University; Miss Gertrude Rines, State Supervising Nurse, and Mrs. Helen H. Gamble, Executive Secretary of American Red Cross, State of South Dakota. After thoroughly discussing the proposition in all its different aspects the Board of Regents officially established such a department at the University, work to begin the next school year. In the evening the Seventh District Medical Society met in the parlors of the Cataract Hotel and after the address of the new president of the Society, Dr. G. E. Van Demark, a symposium on Public Health matters was held, in the discussion of which all members and visitors took an active part.

PHYSICIAN WANTED

Dickey, N. D., is in need of a good physician, and the location is a good one. The population of the village is 250, with a surrounding territory of twenty miles, including a number of small towns. Full information can be obtained of Earl Scea, Village Clerk, Dickey, N. D.

SUBSTITUTE PHYSICIAN WANTED FOR ONE YEAR

A young physician is wanted to take a doctor's practice in South Dakota for one year. State experience, from what school graduated, and salary wanted. Address 308, care of this office.

LABORATORY TECHNICIAN WANTS POSITION

A woman who has just completed a course of laboratory work in the St. Paul City Hospital desires a position in a hospital or physician's office as laboratory technician. Will go out of the city if required. Will begin work on moderate salary. Address 304, care of this office.

PRACTICE WANTED

A physician and surgeon just returned from France desires a good location or a partnership. Graduate of a high grade medical school, and can give the best of references. Will consider an opening in any of the Northwestern States. Address 311, care of this office.

PRACTICE FOR SALE

In a county-seat town of over 1,000 population on main line of railroad between St. Paul and Duluth on a beautiful lake. Fine country and improving. Nothing for good-will. Office fixtures and drugs reasonable. Am going south. Address 306, care of this office.

OPENING WANTED

A physician with excellent experience in general and emergency surgery, also general medicine, desires an opening in one of Minnesota's larger cities. Aged 39; married; best of references as to character and ability. Will consider contract or hospital work; partnership; association or good location. A reasonable investment will be made. Address 309, care of this office.

PHYSICIAN WANTED

Kensington, a growing village in Douglass County, Minn., needs a physician, Scandinavian preferred. Territory is large and very rich, all collections practically 100 per cent. For any information desired, address E. T. Bjorklund, Kensington, Minn.

POSITION WANTED IN PHYSICIAN'S OFFICE

By a young woman of 23 who has been in a drug-store for a year and a half doing the prescription work and assisting a surgeon in his minor surgery in his office and hospital. Has a good education and can keep books and do typewriting, but not short-hand dictation. Will give the best of references. Permanent work wanted. Address 310, care of this office.

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A valuable adjunct to intravenous medication in the treatment of syphilis. Put up in syringes, ready for use. Credit 50c upon return of syringe.

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We argue that Quaker Oats, in these high cost days, should be the basic breakfast.

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PUBLISHER'S DEPARTMENT

A SILVER GERMICIDE IN CONVENIENT FORM

Silvol Capsules, a convenient form of silvol, enable a physician to prepare a fresh solution of silvol in a few minutes. The contents of one capsule, when dissolved in two fluidrachms of water, make a 5-per-cent solution of silvol. The contents of four capsules, when added to two fluidrachms of water, make a 20-per-cent solution of silvol.

Silvol is a non-irritating silver germicide. It is indicated in the treatment of acute inflammations of the mucous membrane of the eye, ear, nose, throat, urethra, and vagina. It is employed in solutions ranging from 5- to 50-per-cent.

A STATEMENT BY J. OGDEN ARMOUR

In agreeing to the terms of the decree referred to in the Attorney General's statement, Armour and Company have abandoned a position which was economically sound and which was unassailable from a legal standpoint, wholly because of our desire to bend the knee to public opinion,—an opinion not justified by the facts but strong for all that.

Armour and Company at all times will do their part in co-operating with the Government to bring to an end the unrest now prevailing in the country and to terminate any suspicion of the public toward the great and vital industry in which they are engaged.

THE POTTENGER SANATORIUM

Among the sanatoria for the treatment of the tuberculosis which have both a national and an international reputation is the Pottenger Sanatorium, located at Monrovia, in the foothills of the mountains near Los Angeles, California, and conducted by the Drs. Pottenger, who have long been leaders in the scientific study of this disease.

In addition to its famous directors and staff, the institution has an ideal location and equipment, with the advantage of unsurpassed climatic conditions.

Its record of arrested and cured cases is, no doubt, unsurpassed by any institution in this country or abroad.

SHERMAN'S BACTERIAL VACCINES

Dr. G. H. Sherman, of Detroit, Mich., has been a pioneer in research work in the bacterial vaccines, and he now makes a large line of these vaccines, which are a big part of modern medication for colds, influenza, pneumonia, etc.

Dr. Sherman's literature on these vaccines covers the subject in a scholarly manner, and it is well worth careful reading. It is furnished medical men without charge, and is sent post-paid.

Dr. Sherman's standing in scientific circles is such as to guarantee all his products to be of the highest standard.

For literature and specific information upon this subject, address Dr. G. H. Sherman, Detroit, Mich.

PLUTO WATER

In the past 50 or 60 years a half dozen or more famous mineral springs have been known in the United States, and practically all of them, except one, have gone "dry," and that one bids fair to go on forever—that spring is at French Lick, Indiana, and it gives the doctor and the patient Pluto Water, which is used in great abundance in almost every hospital in America. It is thus freely

used because it opens the digestive system when it has becomes sluggish, and restores it to a state of normal functioning.

If one cannot go to French Lick Springs and drink the water, he can at least get it at every drug store in this country.

HORMOTONE

Hormotone is a plurigranular preparation with qualities as distinctly determined as the quality of the extract of the thyroid gland, whose discovery marked an epoch in medicine. Hormotone is the result of the chemical researches of the house of Carnrick (G. W. Carnrick Co.), which has given the medical profession a number of notable scientific products of great value. Hormotone is especially useful in the menstrual and menopausal disorders, and produces results when all other treatment seems to fail.

The G. W. Carnrick Co., 17 Sullivan St., New York City, will be pleased to supply literature to interested physicians.

BENETOL

Benetol has become recognized by surgeons in all parts of the country as one of the most useful hospital and sick-room antiseptics now on the market. It is a coal-tar product of definite chemical composition, with high germicidal power, and yet wholly non-poisonous, making it an ideal disinfectant for both external and, when properly diluted, for internal application. It is of the carbolic acid type, and yet so harmless to human body that it is preferred not only to carbolic acid, but to all other like products.

The Benetol Company, Minneapolis, will be glad to furnish full information concerning their product and to send any physician generous samples for trial use.

THE WESTERN CHEMICAL COMPANY'S NEW BUILDING

When the Western Chemical Company announced its removal from Hutchinson, Minn., to Minneapolis, it selected a site for a handsome office and manufacturing building on University Ave., in Prospect Park. The residents of this handsome residential district seriously objected, and induced the City Council to deny the Company a building permit, and spread the news in the public press.

When several civic associations saw the harm that might thus be done to the city, a vigorous movement was set on foot, and the Company has been granted a permit to erect the handsome and commodious building of which a cut appears on another page.

THE MAYO OPERATING-TABLE

When the Mayo Clinic was equipped with a table made upon their own specifications, the Minneapolis manufacturers continued to supply orders for this table, which soon become known in the profession as the "Mayo" table.

The special characteristics of the table are the simplicity of its lines and the convenience of its drawers, which extend the full width of the table, and can be opened from either side. The drawers are also big enough to hold everything that is needed by the operator.

The manufacturing establishment that made these tables has discontinued this line of their business, and the supply of tables on hand were sold to Mr. E. J. Kimball, of Minneapolis, who now offers them for sale. His announcement will be found on another page.

GLYKERON

The above is the new name given by its manufacturers to Gyco-Heroin, and the publicity given the new term by the manufacturers through medical journals has made it known as the distinctive name of their product, and all dispensing pharmacists recognize it.

Moreover, this publicity has resulted in a large increase of the demand for this excellent remedy for all affections of the respiratory system, such as coughs, asthma, phthisis, etc.

The Martin H. Smith Company, of New York, manufacture Glykeron.

THE PNEUMONIC LUNG

The physician, in his ever constant search for additional knowledge, is entitled to the best there is, and with this end in view a brochure "The Pneumonic Lung" has been published in the belief that therein the discriminating physician will find some facts which will aid him in the pursuit of his professional duties. The text matter of this booklet is the result of long and exhaustive study of the literature on pneumonia in its different phases, and in its preparation the works of practically every standard author who has discussed internal medicine have been consulted. The clinical records of hospitals have been a source of information and confirmation; the most recent discussions on pneumonia in American, British and French medical journals have been perused, and no field which would yield information has been left untilled.

The illustrations have been painted especially for the text; and the subject has been given the closest attention and study, and no opportunity has been neglected to attain the close pathological and anatomical touch so essential in bringing out the necessary details, thus adding

to their practical value. With the object of presenting to physicians a booklet which would refresh their knowledge of the etiology, pathology, symptomatology, and treatment of a most destructive disease, and in order that they might constantly have at their elbows an authoritative and most practical exposition of the subject, the authors have gone deeply into the matter.

Physicians may obtain, free, a copy of this interesting booklet by addressing The Denver Chemical Mfg. Co., 20-24 Grand St., New York City.

THE SWEDISH HOSPITAL OF MINNEAPOLIS

The Swedish Hospital is one of the half dozen largest hospitals in the Northwest, and it is one of the best equipped and managed in Minneapolis. It has a beautiful location facing a large city park, and, though near the heart of the city, it is free from all annoying city noises.

It has three fully equipped operating rooms, with an experienced anesthetist and trained nurse in each; and its pathologist, Dr. C. R. Drake is an expert in his line of the highest standing.

The Swedish Hospital is a favorite with Minneapolis people of all classes. Its maternity department occupies an entire floor of the hospital's newest building; and the Nurses' Training School is a high-class institution of its kind. No other hospital in the Northwest sent a larger, or even as large, a percentage of its corps of nurses to service abroad when the war broke out.

The hospital will soon be equipped with an abundant supply of radium, and will thus add largely to its facilities. Part of this supply has already been received.

Visiting physicians and surgeons will always find a cordial welcome at the hospital; and any information may be had by mail, by addressing Supt. G. W. Olson.



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What he wants first, and wants quick, is Relief.

Relief from the Pain, the Inflammation and the Congestion.

Relief from the Soreness and Stiffness of Limbs.

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A HANDSOME DONATION BY COL. H. A. METZ

Colonel H. A. Metz, president of the H. A. Metz Laboratories, Inc., has donated the necessary funds to the Volunteer Hospital of New York for the installation and development of a urological and syphilological department, both in the hospital and its dispensary. It is the hope of Colonel Metz that the department will not only be able to do the usual ambulatorium and bedside work of such a subdivision, but that it will also engage in research work which may lead to preventive measures and to treatment, to lessen the evils of syphilis for the betterment of the race.

This donation by Colonel Metz is in keeping with his action in developing a large scientific organization in his laboratories in Brooklyn. He has on his staff a number of eminent biologic and physiologic chemists who are engaged in research work, not only in connection with Salvarsan and Neosalvarsan, but other products, quite foreign to the arsenicals, are being studied and developed by these experts.

PHARMACEUTICAL HOUSE MAKES INTERESTING ANNOUNCEMENT

In view of the nation-wide movement against intoxicants and the trend of the times as regards alcohol in its various forms, it is refreshing to note the stand taken by one of the large pharmaceutical laboratories, Eli Lilly & Company of Indianapolis, whose price list has been undergoing a revision, and all alcoholic medicinal preparations that showed an increase in sale due to their use for beverage purposes, have been deleted from the list.

Eli Lilly & Company recognizes the fact that there

is a legitimate demand for many of the products containing alcohol; it also recognizes that under existing laws some of these products constitute a temptation to the unscrupulous. Rather than consent to an abuse of its products this manufacturer stands ready to discontinue their manufacture and sale. The medical profession will look upon this step by Eli Lilly & Company as an admirable act in keeping with the attitude that has characterized a concern that has the reputation of being one of the most ethical pharmaceutical and biological houses in this country. It is to be hoped that many other pharmaceutical houses will follow in the lead of this Indianapolis manufacturer and thus assist in elevating pharmacy to the highest possible plane of service to the medical profession.

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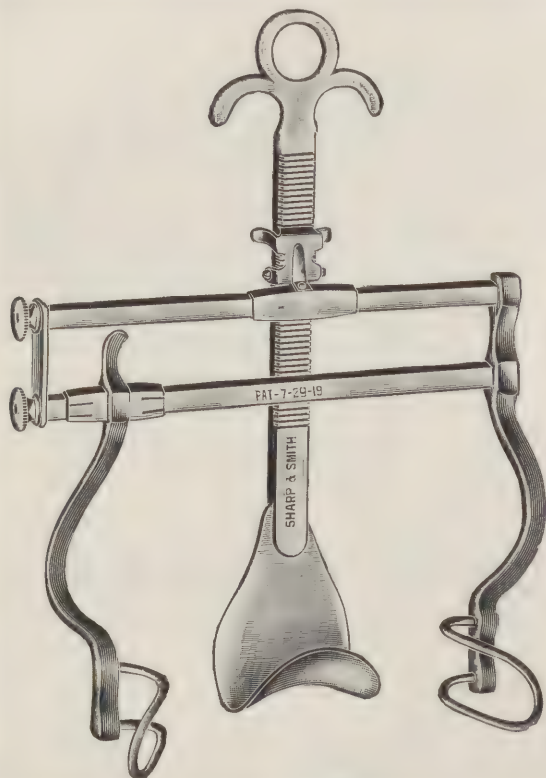
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FOOT DISABILITIES*

BY PAUL W. GIESSLER, M. D.

MINNEAPOLIS

A consideration of this topic may well be begun by a review of the anatomy of the foot, which is by no means a simple mechanism.

The astragalus is the only bone of the foot which enters into the ankle-joint and the only bone of the foot to which no muscles are attached. It articulates above with the tibia and fibula, below with the os calcis, and in front with the scaphoid. It moves between the malleoli about a horizontal axis, which lies just below the lower level of the external malleolus. The os calcis is the largest bone of the foot and forms the heel. It articulates above with the astragalus by two distinct articular surfaces, and in front with the cuboid. The astragalocalcaneal joint moves about a longitudinal axis, producing inversion and eversion of the foot. The astragaloscaphoid and the calcaneocuboid articulations form what is called the mediotarsal joint, which moves about a vertical axis, producing abduction and adduction of the forefoot. Three cuneiforms, five metatarsals, and fourteen phalanges complete the skeleton of the foot, and make in all thirty-six articulations.

The skeleton is strongly reinforced by the powerful plantar fascia, attached behind to the os calcis and in front to the heads of the metatarsals. It assists in preserving the arch of the foot by drawing the heels and toes together. The most important ligaments are the internal and external lateral and posterior about the ankle-joint and the strong calcaneocuboid and calcaneoscaphoid. The calcaneocuboid forms a capsule

about the joint between the os calcis and the cuboid, the inferior part being especially strong in resisting strains, while the calcaneoscaphoid assists in supporting the head of the astragalus.

The muscles may be divided into dorsal and plantar flexors. The plantar flexors are five times as strong as the dorsal flexors, the calf muscle being the big lever of the foot. The gastrocnemius and soleus arise above on the femur and tibia and fibula, respectively, and unite below in the tendo Achillis which is attached to the posterior aspect of the os calcis. Its function is to raise the heel. It is at its greatest stretch when the leg is extended and the foot dorsiflexed. The narrowest point of the tendo Achillis and the site of selection for tenotomy is on the level of the external malleolus; here it is most free from the deeper structures. On the front of the foot we have the tibialis anticus attached to the first metatarsal and the first cuneiform. It is a dorsiflexor, adductor, and inverter of the foot. The extensor communis digitorum and the extensor proprius hallucis extend the toes and dorsiflex the foot.

On the outer side of the foot we have the peronei, arising from the fibula and passing around the external malleolus, the brevis inserting on the fifth metatarsal, the longus crossing the plantar aspect of the foot to the first metatarsal and the first cuneiform. They plantarflex, evert, and abduct the foot.

Passing around the internal malleolus we have the tibialis posticus, flexor longus digitorum and flexor longus hallucis. The plantarflex when

*Presented before the Upper Mississippi Medical Society, January 6, 1920.

the foot is free. When the great toe is held rigid by the short plantar muscles and the heel is lifted, they turn the ankle up and out in the strong active position of the foot.

The movements of the foot as a whole are three: dorsi- and plantar-flexion at the ankle-joint about a transverse axis, dorsi-flexion making an angle of 75 degrees with the vertical and plantar-flexion an angle of 150 degrees. In the subastragaloid joint the movement of inversion and eversion takes place about a longitudinal axis. Inversion is greater than eversion, but both are slight. Abduction and adduction occur at the mediotarsal joint about a vertical axis, abduction to 15 degrees and adduction to 30 degrees.

The function of the foot is to support the body weight and to act as a lever to raise and propel the body forward. It is so constructed with thirty-six articulations and strong muscles and ligaments as to have elasticity under pressure and to allow for alternations in attitude under strain.

The construction of the arch of the foot may be better understood by considering it one-half of a dome formed by placing the two feet together. A plaster impression of this dome will have somewhat the appearance of an inverted saucer, the highest point being the astragaloscaphoid joint. From here it slopes gradually to the outer border, which, in contrast to the inner border, makes an imprint; therefore it is more solidly braced and better adapted to weight-bearing. The sharp descent to the heel shows that the heel is better fitted for weight bearing than the anterior pillar which is longer, less strong but more elastic.

The foot at rest hangs in plantar-flexion, slight adduction, and inversion. This puts a strain on the dorsum of the foot and the external ligaments. If allowed to continue, a weak foot or even a paralysis of the dorsiflexors and a shortening of the tendo Achillis occur. In continued recumbency, therefore, we should always take measures to prevent foot-drop.

In the passive standing attitude, the muscles are more or less relaxed, and the foot is chiefly supported by the ligaments. The front of the foot turns out, the leg is rotated slightly inward, and the weight is thrown toward the inner border of the foot. If the elasticity is diminished or gone, the arch is subject to abnormal pressure and becomes depressed.

In action, the foot is supported more by the muscles. As the foot changes from the passive attitude to one of action, the big toe, first metatarsal, and first cuneiform and scaphoid are ad-

ducted, increasing the strength of the dome of the foot. The foot should be held so that the line of weight falls through the center of the patella, along the tibial ridge, through the center of the ankle, and ends between the second and third toes. The feet are held parallel. The weight falls momentarily on the heel, then on the outer border of the foot, then on the five metatarsal heads and the toes, and, finally, the great toe gives the backward thrust; so that from behind the foot appears to toe in. Toeing out makes the weight fall toward the inner side, and interferes with proper leverage.

The early symptoms of weak feet are caused by fatigue and strain of muscles working at a disadvantage, and resulting in injury to the foot mechanism. Shoes that cramp and faulty attitudes in standing and walking produce this abnormal functioning. Disease or injury, such as tuberculosis, arthritis, Pott's fracture, and sprains, leave the foot in a weakened condition. Long sickness and general debility impair the musculature. Inactivity and overwork alike reduce muscle tone. Increase of weight puts an added burden on the feet. Occupations, such as those of motormen, policemen, cooks, and bartenders, requiring long standing in passive attitudes without alteration of posture, result in loss of elasticity.

Patients' recital of symptoms is most varied: they complain of weak ankles, cannot walk far without tiring, cannot find a comfortable shoe, the feet may be all right in the morning but get tired in the afternoon and worse at night, feet feel numb, they become swollen or perspire freely, they may be stiff, the patient sits more than he used to, rides instead of walking, does not run upstairs, turns the ankle easily. Pain or discomfort may be in any one of several places—the heel, the arch, the ball of the foot, the instep, the outer border, the calf, knee, thigh, hip or back. As a rule, the discomfort is present only during or just after use.

These early symptoms are due to a strain on the muscles out of proportion to their strength. The patient suffers from strain long before the arch is depressed, and an inward bulging and abduction of the forefoot may be the only deformities. It is not until the ligaments give way that the bones assume abnormal relations to each other and the feet become flat. When the bones become fixed in an abnormal position, pain is often absent. All flat feet are mechanically weak, but all flat feet are by no means painful. Some low arches are inherited, and others fall early in

life; but the foot becomes accommodated to the change.

In the examination of the patient before the shoes are removed, these points should be noted: does he limp or toe out? is the gait elastic? are the inner ankles prominent? are the soles flat on the ground or the toes turned up? is the big-toe joint prominent? In the bare feet, notice these points: are the toes flat, flexed, or extended? parallel or pinched? is there a bunion? is the forefoot flat and extra wide? does the scaphoid bulge? is the tendo Achillis vertical or convex? are calluses present? what is the circulatory condition? is Feiss' line below the scaphoid? can the patient rise easily on the toes and does this heighten the dome? with the feet together is there an interval between? does the line of weight fall between the second and third toes? are there points of tenderness? is the foot deformed when at rest, or does the deformity become apparent only when weight is applied? and does an active position reduce the deformity?

Further examination consists in testing the range of motion, the power of abduction and adduction, and taking an impression of the foot with and without the weight. This is done by painting a piece of paper with a concentrated solution of tannic acid in alcohol, painting the foot with a solution of ferric chloride in alcohol and pressing the foot on the paper.

Bony changes, exostoses, and arthritis may be demonstrated by the *x*-ray.

From the foot findings Whitman has made four classes of foot disabilities:

1. The normal foot improperly used.
2. The foot which is normal at rest, but forced into an attitude of deformity by weight.
3. The foot whose voluntary motion is limited, and forced motion painful.
4. Persistent deformity with the foot at rest.

These are different degrees of the same condition, ranging from the simplest weak foot to the rigid flat foot.

The objective symptoms, some or all of which are found in the weak foot, are as follows:

- The forefoot is abducted.
- The inner border leans toward the other foot.
- The internal malleolus is prominent.
- The external malleolus is advanced.
- The direction of the tendo Achillis is altered.
- The plumb line from the center of the patella falls inside of the second toe.

The normal range of abduction and inversion is lacking.

Swelling at the astragaloscaphoid, calcaneocuboid, and ankle joints.

Tenderness in heel, over the scaphoid, over the stretched ligaments, over the outer border of the foot.

If this condition is allowed to progress, the weakness increases, the movements become painful and restricted, muscular spasm results, the dome lowers, bony changes occur, the habitual attitude becomes permanent, and we get the rigid flat foot. The os calcis is tipped toward the inner side, the scaphoid and first cuneiform are lowered, the bones cannot be shifted to accommodate the foot to changes in the walking surface, the adductors are stretched and the abductors contracted, adduction is impossible, the leg is rotated inward, the weight is borne on the heel, and the gait becomes slouchy, one foot being pushed in front of the other with the knees flexed.

The object of treatment is to change the shape, attitude, and voluntary motion back to normal. First, the normal amount of passive painless motion must be regained, for muscular strength cannot be increased if motion is restricted by lack of room, improper position of the foot, pain, contracted muscles, adhesions, or bony deformity.

The shoe should be broad enough in the toes to allow for plantar-flexion of the toes, the sole should be the shape of the sole of the foot, the heel broad, and the inner edge straight. A flexible shank can be worn if the muscle balance is correct.

If the patient's daily life requires standing for any length of time, he should avoid the continuous passive attitude by rolling the foot onto the outer border. Walking should be conducted after the manner described above.

Athletics that require the free use of the foot are beneficial. Dancing is good exercise, skating bad. The exercises which most strengthen the weak muscles are rising slowly on the toes at the same time turning out the ankles, rising on the heels, walking on the outer border of the foot, circling the forefoot in both directions, and adducting the forefoot. The patient should acquire the habit of sitting with the feet crossed, the weight resting on the outer borders.

As exercises are valuable only when the foot is flexible, they should be preceded by manipulations when motion is restricted. In the milder cases this can be done without an anesthetic, and the foot held in the corrected position by strapping.

Severe, forcible manipulation and stretching under an anesthetic may be necessary, followed

by a plaster cast to hold the foot in an over-corrected position.

To preserve the normal position of the foot while restoring strength to the muscles, a lift the entire length of the inner border of the shoe may be sufficient, or strapping may be used in addition, or, in more extreme cases, a brace. A brace is always necessary after forcible correction of rigid feet. The indiscriminate use of braces should be avoided, and it must be remembered in their use that the tendency is to become dependent on the brace and to neglect the exercises which restore the foot to its normal strength.

A brace to be well fitted to the foot must be made over a plaster model of the foot. A thin cast is applied to the foot held in the corrected position, removed, and filled with plaster; and on this model is marked a drawing of the brace desired.

During the period of muscle strengthening, heat followed by massage is found alleviating to the patient and favorable to circulation and muscle tone.

Let me say a word about weak feet in children. The origin of weak feet may sometimes be traced to childhood, where improper attitudes are common. Here it is unusual to have pain, the chief complaints being awkwardness and fatigue. Here again pigeon toe due to inward rotation of the leg, must not be confused with the pigeon toe which is an involuntary safeguard against increase of an existing eversion. The two may be combined and the treatment of pigeon toe in this case would tend to increase the eversion and consequently the weak foot.

A condition which may accompany weak feet or may sometimes be the only deformity, is a shortening of the tendo Achillis. The patient complains that he cannot walk far, his stride is shortened, he cannot wear low heels, he has pain in the heels, calves, and knees, he has difficulty in walking downstairs, and he frequently sprains his ankle. The treatment is to stretch the heel cord.

In the normal anterior metatarsal arch, the second and third metatarsal bones are longer than the others and on a higher plane. When weight is borne, they sink to the level of the others; when the weight is removed, the arch is restored by its natural resiliency. When the arch is weak or broken down, this resiliency is lost, and the second and third heads are depressed and may be fixed in depression. The narrow pointed shoe is the chief predisposing cause of this weakness. It acts by compressing the toes, lifting them off the ground, preventing their normal function, and throwing additional weight and strain on the anterior arch. There are pain in the ball of the foot and calluses under the heads of the metatarsals, the forefoot is broader than normal and stiff, and plantar-flexion may be limited or impossible. Flexibility must be produced by manipulation, and the arch held in correction by adhesive plaster with a felt pad just behind the head of the third metatarsal. This pad later may be fixed in the shoe, or, if necessary, a metal brace can be made with a convexity under the anterior arch. The patient must strengthen the natural supports of the arch by forced flexion of the toes and proper functional use.

THE DIFFERENTIAL DIAGNOSIS BETWEEN TRACHOMA AND FOLLICULAR CONJUNCTIVITIS*

By G. GOLSETH, B.S., M.D.

JAMESTOWN, NORTH DAKOTA

Trachoma may be considered under the following subdivisions:

1. Papillary trachoma.
2. Granular or chronic trachoma.
3. Mixed trachoma.

The first form consists in the development of the so-called papillæ, which are elevations newly formed on the surface of the conjunctiva, giving it a velvety appearance. When the papillæ are large the conjunctiva appears studded with

coarse granules or even with raspberry-like projections. These papillary growths are caused by an increase in the size of the surface of the hypertrophic conjunctiva. This hypertrophy throws the conjunctiva into folds, between which deep clefts are formed. The papillary form is found exclusively in the tarsal conjunctiva, and is always more clearly pronounced on the upper lid. Unfortunately, papillary hypertrophy of the conjunctiva is not limited to trachoma, but is found in a less degree in any long-continued irritation of the conjunctiva.

*Read at the Thirty-second Annual Meeting of the North Dakota State Medical Association, at Grand Forks, June 24 and 25, 1919.

Granular trachoma is characterized by the trachoma granules. These are round, ill-defined, translucent, grayish-white bodies showing through the superficial layers of the conjunctiva. They are firmly and deeply imbedded in it, and in some cases are more than two millimeters in diameter. They occur principally in the retrotarsal folds. In the tarsal conjunctiva the granules are smaller, less visible, and have the appearance of bright-yellowish points, but often they cannot be seen at all on account of the papillary hypertrophy.

Mixed trachoma is made up of the papillary and the granular forms, and is the form in which trachoma generally appears. Microscopically, it has been proven to be the only form, because, even when the naked eye cannot detect the granules, they are in cross-sections, lying within the papillæ or in the deeper portions of the mucous membrane.

Follicular conjunctivitis may be classified into three types:

1. Folliculosis.
2. Folliculosis complicated with some form of conjunctivitis.
3. Acute follicular conjunctivitis.

Folliculosis is characterized by small, uniform, well demarked, glassy granules which have the appearance of being very superficial. There is no thickening and no inflammation of the conjunctiva which is perfectly normal between the follicles. The blood vessels of the cul-de-sacs and tarsal plates are also normal. In this type there are no subjective symptoms, but the follicles persist for years.

Folliculosis with some form of conjunctivitis will appear according to the kind of infection.

Acute follicular conjunctivitis is marked by follicles in the retrotarsal folds and a granular appearance of the tarsal conjunctiva. The follicles are irregular in shape and size. The largest are found in the retrotarsal folds, and on the lower border of the upper tarsal plate. There is considerable thickening of the conjunctiva between the follicles and the blood supply is somewhat obscured. But the follicles soon disappear when the conjunctivitis subsides.

Etiology.—Great progress was made when, in 1907, Halberstädter and Prowazek described inclusions which they had observed in the epithelial cells of the conjunctiva. After staining with Giemsa's stain, the film obtained by scraping the conjunctiva of a trachoma patient, they found near the nuclei of the epithelial cells, round or

oval dark blue or violet non-homogeneous masses within whose bodies they discovered sharply defined, small, red granules. These bodies are present in all cases of fresh trachoma, but are not the cause of it. McKee, in 150 examinations, found the trachoma bodies in 17 cases of active trachoma, 1 case of pneumococcus conjunctivitis in an infant of ten days, 2 cases of purulent conjunctivitis in babies of two weeks, 2 infants with no conjunctivitis, and 1 adult male with no conjunctivitis. His findings were negative in 13 cases of old trachoma, 60 cases of catarrhal conjunctivitis, 28 normal eyes, and in 5 cases of gonorrheal ophthalmia neonatorum. Heyman states that he has found the trachoma bodies only in trachoma, in infantile conjunctivitis, and in a case of suspicious conjunctivitis in an adult male.

Trachoma bodies are not specific of trachoma, but they are absolutely diagnostic in differentiating trachoma from follicular conjunctivitis, because they are always found in cases of fresh trachoma, in smear or tissue preparations, and very seldom in follicular conjunctivitis.

Folliculosis may be regarded as an expression of adenoid activity incident to childhood and youth. The majority of the cases are due to this tendency stimulated by dust, foul air, overstrain, eye-strain, etc. It is not due to any conjunctival infection. Even the prolonged use of atropin or eserine will produce follicles.

Folliculosis complicated with some infection is generally caused by the Morax-Axenfeld and the influenza bacillus.

The acute follicular conjunctivitis is caused by diplobacilli, pneumococci and streptococci. It is of interest to note that Sydney Stephenson found 94 per cent of the school children afflicted with follicular conjunctivitis.

SYMPTOMS

Trachoma, in the majority of cases, sets in with moderate photophobia, lachrymation, and pain. In places where trachoma is endemic the disease quite frequently begins insidiously, and the patients do not have their attention called to the disease until the pannus covers the cornea and disturbs the vision. These insidious cases belong to the granular form. In the acute form, which fortunately is rare, the disease begins with a severe inflammation, edema of lids, great swelling of the conjunctiva, and a profuse purulent secretion. The acute trachoma occurs generally during an epidemic of trachoma. Even the

chronic cases of trachoma show inflammatory exacerbations and considerable secretion of mucus, especially during these exacerbations.

Folliculosis is an exceedingly chronic condition, and presents no secretion at any time of a mucus nor any inflammatory reaction and no subjective symptoms.

The other two forms which make up a very small percentage of the cases classified under follicular conjunctivitis, produce symptoms according to the kind of infection. The Morax-Axenfield conjunctivitis has mild ones, while pneumococcic conjunctivitis presents quite severe symptoms.

TRACHOMA

In the majority of cases trachoma sets in with photophobia, lachrymation, pain, and secretion.

The beginning is marked by irregularly placed granulations, which tend to become confluent and with an early involvement of the fornix.

A ring of ocular conjunctiva covered with glistening granulations extends from each fornix over on the eyeball.

In the early stages the fornical conjunctiva of the upper lid is always more swollen, rough, and inflamed than in follicular conjunctivitis, and no areas of normal tissue can be seen in this region or over the lower third of the tarsal plate.

There are no visible blood-vessels running across the cul-de-sac.

Spontaneous or induced cure occurs only with the onset of scarring.

Occurs more often in adults.

Pannus and corneal ulcers occur in 20 to 40 per cent of the cases.

Trachoma bodies are found in all fresh cases of trachoma.

FOLLICULAR CONJUNCTIVITIS

Folliculosis, which makes up 95 per cent of the cases of follicular conjunctivitis, presents no secretion and no subjective symptoms.

The beginning is marked by small reddish elevations on the conjunctival surface, which remain sharply demarked except in the acute type, when they are not so well demarked.

There is no such ring.

In folliculosis there are no changes in the conjunctiva between the follicles. In the acute type there are some changes, but not nearly so marked.

In folliculosis there are no changes in the blood-vessels. In the acute type the blood-vessels are somewhat obscured, but can always be seen.

There is no scar-formation.

Occurs chiefly in school children.

Pannus and corneal ulcers do not occur.

Trachoma bodies are found very seldom.

PROVOCATIVE MEASURES IN SYPHILIS

By HERBERT A. MORRIS, M. D.

MINNEAPOLIS

The serum reaction as a diagnostic measure in suspected old tertiary syphilis, is the bane of the average physician. In the presence of an excellent technic the results are too frequently negative; and in a known tertiary case the patient is only too ready to consider himself free from the disease and believe that he has had sufficient treatment, while, in a suspected case, he probably heaps insult upon his physician for even indicating the possibility that his continued undiagnosed symptom may be due to this disease when the result is negative. In addition, he does not relish the financial drain.

Syphilologists estimate that the general population of civilized nations is infected to the extent of 15 per cent or more, irrespective of class, and the percentage is but slightly less in isolated communities; and they draw attention to the small percentage of the population under treatment or diagnosed.

Primary syphilis shows a positive reaction approximately six weeks after inoculation and in direct proportion to the time lapsed. Fortunately, we have other diagnostic methods during this period, and know definitely that at the end of the period we shall obtain a positive. The

same satisfaction exists as to secondary conditions, the serum reaction being almost absolute in its persistence during this period of invasion.

This leaves us the tertiary, or most prevalent type, which, unfortunately, shows a varying degree of reaction. This is presumably due to the inactivity of the spirochete, insofar as either the general blood or lymph-channels are concerned, and indicates its retirement to such deep structures as the liver, etc.

Observers have shown that their Wassermann group findings in these old tertiaries are all the way from 15 to 60 per cent; and this alone is sufficient to discourage anyone but an enthusiast, and is quite evidently unsatisfactory to the practitioner who has but casual use for this test as an adjunct or last resort.

It has been noted that after the administration of antisyphilitic medicine in small quantities, active manifestation of the disease frequently becomes apparent, and the reaction becomes positive. This led to considerable investigation, and as a result fractional doses of arsenicals or mercury came into more or less use for diagnostic purposes in old tertiary cases. This provocative routine, unfortunately has not been so successful as we hoped, many holding that it had no effect, except in isolated cases, and here, of course, would be of no great value.

Provocative measures have generally consisted in the administration of single doses of arsenicals, in the strength of from 0.2 to 0.5 grams, or a week of treatment with the mercurials. After the lapse of from two to five days the serum is examined.

That this routine is not productive of the best results, is the reason for submitting the first cases that came to my attention. Further investigation confirmed the procedure.

CASE 1

A negro, age 28, transferred to the base hospital with a diagnosis of chancroid, phagadenic, severe, and chronic, involving the entire prepuce and part of the gland.

History: A sore developed on prepuce two years before and partially healed after three or four weeks, but broke down repeatedly, becoming gradually worse. Glands: Deep and superficial inguinals, and epitrochlea enlarged and hard; slight discharge from meatus; multiple openings in prepuce with profuse purulent discharge.

Microscopical examination: Gonococci present; vibrones, spirochaetae, and b. Ducrey-Unna not found; Wassermann, negative.

Treatment: Usual antiseptics, gauze drainage, and frequent cleansing with peroxide. No improvement in condition, which clinically appeared to be gangrenous

balanoposthitis. Perforation of the urethra, about one-half inch from the meatus, led to circumcision and cauterization. The case progressed unfavorably, and 0.3 gram of arsenobenzol was administered. The Wassermann at the expiration of 48 hours was negative. Weekly Wassermanns showed the first, second, third and fourth minus, the fifth plus minus, and the sixth double plus.

CASE 2

A negro, age 28, transferred to base hospital with the diagnosis of chancroid single, right side prepuce.

History: A sore appeared three months before, gradually enlarging. Glands: Both deep and superficial inguinal, and epitrochlea slightly enlarged and hard. Microscopical examination negative as to vibrones, spirochetes gonococci and b. Ducrey-Unna; mixed infection; Wassermann, negative. Local treatment did not improve the condition; and perforation of redundant prepuce on right side, with peripheral extension and eventual involvement of the urethra, led to circumcision and cauterization. Intravenous injection of 0.3 gram salvarsan was given as a provocative. The weekly results were, first, second and third negative; the fourth plus minus; the fifth plus; the sixth double plus. Full treatment was resorted to, and the case progressed nicely.

CASE 3

White, regular, age 33, transferred to base hospital for diagnosis, had an eroded area about the size of a pea on the scalp over tip of the right ear. There was considerable thickening beneath and surrounding this point. This had started eight weeks before as a pimple. He gave a history of a sore on the penis several years ago. A seropurulent discharge showed, microscopically, mixed infection; Wassermann, negative.

Diagnosis: Tuberculosis of the skin. X-ray treatment was advised. After the first treatment the peripheral extension was noticeable. After the third treatment the area broken down was as large as a quarter. The Wassermann reaction at this time was double plus. Full treatment brought about satisfactory results.

The outstanding features in Cases 1 and 2 are that, after provocative measures, the positive result did not occur until after five or six weeks.

It takes approximately six weeks to develop a positive Wassermann in a new infection, and there seems to be no reason why we would not expect the same length of time to lapse after provocative measures in these quiescent tertiary cases, where the spirochæta is isolated and practically dormant.

In the use of provocatives we are dealing with cases which range from doubtful (plus minus) to those in which the provocative, though weak, may destroy the last vestige of disease. It takes no great effort to concede that a plus minus case will more readily give a positive within forty-eight hours than an old tertiary that has never shown symptoms.

It is necessary that alcoholic beverages be denied for several days prior to making the test. Craig and Nichols have shown that negative results frequently occur if this precaution is not heeded.

Case 3 calls attention to the possibility that

thermic, as well as chemic, methods may assist in the future determinations.

We were unable to pursue this work, so far as the treatment of deeper structures is concerned, on account of more important work in the X-ray department.

INTRA-OCULAR MANIFESTATIONS OF GENERAL DISEASE*

By W. E. PATTERSON, M.D.

MINNEAPOLIS

As regards the intra-ocular evidence of a general disease, we often see the various pathogenic changes peculiar to that disease in its effects upon the tunics of the eye or the optic nerve. Nearly all constitutional disorders are evidenced within the intra-ocular structures by some vascular, degenerative, or proliferative change that appears, if thoroughly understood, to be almost pathognomonic of that disease. The eye is distinguished from all other organs of the body in that its tissues are transparent. By the use of the ophthalmoscope we are able to see the living blood circulate in its course through the vessels. We see hemorrhages and exudates appear and disappear, and we can observe the secret processes of disease and repair. On account of the great vascularity of the eye, it is not surprising that often the first indication of a constitutional disease is manifested in the tunics of the eye.

In studying a fundus the color must be one of our first considerations; therefore we must understand the color variations in the normal fundus. The color of a normal fundus varies in proportion to the amount of pigment cells, and their distribution between the retinal epithelium and choroid; therefore we see the variation between the chocolate-colored fundi of the dark races and those where pigment cells are entirely absent, as in the albino. Between these two extremes there is the case where the retinal pigment is in excessive proportion to that of the choroid, the "peppered" fundus. On the other hand we see the opposite disproportion where the choroidal pigment is abundant and the retinal pigment is small in amount, which gives it the so-called tessellated appearance. These gradations in the distribution of pigment must be thoroughly understood and studied with great care to avoid mistaking an unusual arrangement of pigment cells for a pathological condition.

One entire tunic of the eye, the uveal tract, is almost entirely made up of vessels, while the dominating features of the retina visible to the examiner are its veins and arteries; therefore, naturally, the so-called angiopathic diseases and the resulting degenerative changes, as seen ophthalmoscopically, are of the greatest interest to the diagnostician.

We are dealing, then, principally, with ademas, hyperemias, hemorrhages, exudates, extravasations, atrophies, and proliferative tissue-formations resulting from inflammatory conditions.

Histologically, each of the tunics is composed of several layers of tissue; but, pathologically, we differentiate only the superficial and deep layers. We speak of the retina as consisting grossly of the inner or nerve fiber layer, which also contains the vessels, the deep or ganglionic layer and the epithelial or pigment layer. In the choroid we consider the vessels, the reticular tissue, and the pigment cells. While the retinal pigment layer is considered a part of the retina, it apparently adheres more intimately to the choroid, and, as it gets no blood supply from the retina, is dependent upon the choroid for its blood supply. Its function is supposed to have something to do in supplying the visual purple to the rods and cones, which sensitizes them to light-impulses.

The retinal arteries and veins arise from their respective central vessels and correspond in name and the arrangement of their distribution through the nerve-fiber layer of the retina.

It is the variation in appearance of the retinal vessels as they undergo engorgements, contractions, distortions, etc., that so often furnishes to us the great index of the vascular changes in the general circulatory system. We have no reason to assume that these vascular changes are ever confined to the retina alone, but to the ophthalmologist they define only one of the numerous forms of angiopathic retinitis, chorioretinitis, or, perhaps, neuroretinitis; while to the internist it

*Presented before the Hennepin County Medical Society, Jan. 21, 1920.

means that these same angiopathic changes are present in the kidneys, the heart, or the secretory organs; to the neurologist, angiopathic degeneration in the central nervous system; to the surgeon, a determinative feature in the prognosis of the case for operation.

Hence, the value of the eye, as a great source of information to the student of medicine, cannot be too strongly emphasized; and to the student of ophthalmology the great need of devoted study and research in intra-ocular manifestations is very evident.

Normally, the balance of pressure between the intra-ocular fluids and the blood-stream is so evenly distributed that the arterial pulse is not discernable to the observer. Any disturbance to the equilibrium of pressure between the eye-fluids and the blood-stream may produce a visible pulsation in the arteries, but only where the intra-ocular tension is greater than the arterial; therefore the arterial pulse is common in glaucoma, in aortic regurgitation, in Basedow's disease, in the stage of arterial relaxation in beginning arteriosclerosis, etc. The arterial pulse seen in the retinal vessels invariably indicates a pathological condition. A venous pulse is often seen normally, and is supposed to be due to slight resistance offered to the flow of blood in the veins as they empty into the cavernous sinus. Arteriosclerosis is essentially a disease, as we see it, of advanced life, but is known to have been observed in the retinal vessels as early as the fifth year.

It is seldom that this disease is seen in its incipency, because, until it is well developed and the vessels have undergone marked changes and have lost a great deal of their normal elasticity, it does not become apparent to the general observer. Ophthalmological examinations are generally too superficial to detect these slight vascular changes, and we often, unwittingly, pronounce a fundus normal, when, as a matter of fact, if a more detailed study had been given to the retinal vessels, an early intimation of a nephritis, a beginning arteriosclerosis, or a grave nervous disease might come through this examination, and would be a timely warning to the patient to investigate the cause, and thereby avert irreparable damage to the endangered structures.

The first ophthalmoscopic evidence of sclerosis of the retinal vessels is dilatation, tortuosity, and pulsations of the arteries, supposedly due to loss of elasticity and contractility in the walls. This pulsation is characterized by lateral displacement of the whole artery, most marked at its bends and

curves. When present it is well developed and unmistakable. It is a true arterial pulse termed "locomotion pulse," as distinguished from the pressure pulse seen in glaucoma and wherever general blood-pressure sinks below intra-ocular pressure. Locomotion pulse occurs in all cases of incipient retinal arteriosclerosis in which the arteries are primarily affected; but, as it causes no disturbance of vision, it is seldom seen by the ophthalmologist. As vascular degeneration progresses and the arteries become rigid, arterial pulsation disappears.

"Simple association of tortuous arteries with locomotion pulse is almost pathognomonic of beginning arteriosclerosis."

"As distinguished from the locomotion pulse, which occurs in the arteries throughout the retina, a pressure pulse is confined to the optic disc."

"As first described by Thoma, thinning and distension of the vessel walls in arteriosclerosis is soon arrested by proliferation and thickening of the intima, media, and adventitia, a process regarded as compensatory." "With the advent of this process the disease enters the stage of vascular rigidity and degeneration, the pathology of which includes nearly all morbid changes that occur in the inner layers of the retina." The chief features of the degenerative stage are changes in the color of the vessels, abnormal variations in the size of the blood-column, and opacities in the arterial walls.

The arteries as a whole are somewhat lighter in color and the central light streak becomes brighter and broader. When this condition is pronounced they have been aptly termed "silver-wire arteries."

A normal retinal vessel has transparent walls; therefore an opacity in the vessel wall, however slight, should be regarded as abnormal.

While the fundus changes in any case of systematic retinitis may strongly suggest the nature of the general disease, they cannot be considered strictly diagnostic; therefore it is not always correct to describe special forms of retinitis as characteristic of a particular disease, and we are often compelled to qualify the term "angiopathic retinitis" with the associated disease as "albuminuric angiopathic retinitis," or "diabetic angiopathic retinitis"; and the familiar ophthalmoscopic picture of Bright's disease, formerly supposed to occur without albuminuria as the result of infection in measles, erysipelas, scarlet fever, and syphilis. Clinically, the term "albuminuric reti-

nititis" has been applied to a group of symptoms consisting of venous engorgement, mild neuritis, retinal opacity, exudation, hemorrhage, retinal degeneration, and atrophy. Formally the so-called "macular star," characterized by a stellate arrangement of white inflammatory deposits that mark the course of the nerve fibers around the macula lutea, was considered pathognomonic of chronic Bright's disease, and the absence of which was often responsible for a failure to correctly interpret other evidences of equal significance, but less conspicuous to the observer. Later research has proven that the "macular star" is not essentially associated with nephritis and may appear in the absence of nephritis; and, visa versa, chronic nephritis is comparatively seldom indicated by a "macular star." Consequently, we conclude that this phenomenon is the result of advanced angiopathic disease, as is the nephritis many times, and that the term "albuminuric retinitis" implies that retinal changes are present which indicate advanced arteriosclerosis accompanied by chronic nephritis; but, undoubtedly, the toxemia resulting from the kidney disease is a considerable factor in producing an inflammatory reaction in both the retina and the optic nerve.

Just a few words in regard to choroiditis and choroidoretinitis. Here we see the most pronounced changes in appearance of the fundus as regards color and arrangement of tissues. Choroidal lesions of endogenous origin are usually of rather slow development, and are of less diagnostic value in relation to general disease than are those of the retina and optic nerve because of the lack of distinction in their appearance regardless of the etiology; and, unfortunately, in many cases, the etiology is obscure, but in every case it signals the pressure of an existing or previous grave constitutional disease. We recognize syphilis, tuberculosis, the general nutritional disorders, and the various forms of focal infections as being most prominent as causative factors.

On account of the great vascularity and extensive anastomosis, tissue-changes as the result of angiopathic diseases are so slight that we give that subject but little consideration in connection with the choroid. As we study the lesions of choroiditis we view it in the exudative, the degenerative, or the atrophic stages, which are all of the chronic type of the disease. Acute or suppurative choroiditis cannot be studied ophthalmologically because vitreous exudates appear synchronistically with the acute inflammation, and obscure our view of the fundus. At the time

of our first examination we often see all forms of the different types of these lesions in chronic choroiditis. The retina is invariably involved in choroidal disease, as its deeper layers are dependent, to a large extent, upon the choroid for its blood supply, particularly the epithelial layer; and one of the first changes that are seen to take place is exfoliation of the retinal epithelium and scattering of its pigment. The disarrangement of this dark background or depigmentation gives, at once, a lighter appearance to the fundus.

Choroidal lesions are differentiated from the retinal by their color, depth, number, and arrangement, and by the amount of the pigment deposit.

The exudates of choroiditis are darker and more yellow in appearance, and lie beneath the retinal vessels. They are more numerous and peripherally distributed; while, on the other hand, retinal lesions are fewer in number and generally arrange themselves within the area limited by the temporal vessels, usually spoken of as the macular region. Migration of pigment from the deeper vascular areas into the choriocapillary region begins early in the disease, and the result is a pigment border to nearly all lesions of the degenerative and atrophic varieties. The retinal vessels and optic nerve do not suffer to any great extent, unless primarily affected by the same process that produces the choroiditis, and, consequently, central visual acuity is retained many times to an amazing extent; and unless a lesion should attach itself directly to the macular area we often find comparatively good central vision where the surrounding areas and periperial regions are spattered with an extensive array of these spots. Contrary to this fact, in retinitis vision may be reduced to almost nothing with comparatively no discernable changes in that structure.

Optic atrophy is divided into three principal types; namely, simple atrophy, neuritic or post-inflammatory atrophy, and retinitic atrophy.

In *simple optic atrophy* destruction of nerve-fibers may be due to pressure, to remote foci of disease, or to general disease of the central nervous system, as tabes and multiple sclerosis. As simple optic atrophy often precedes, by years, the appearance of other symptoms denoting the presence of a constitutional disease, it is often the ophthalmologist who makes its first discovery. Simply atrophy is often referred to as gray atrophy on account of the gray appearance of the disc, in contradistinction to the snow-white disc seen in post-neuritic atrophy.

I speak of simple optic atrophy particularly, as it may so often be of great prognostic and diagnostic value as a premonitory indicator of an approaching tabes or some other grave nervous disease.

Without giving details we all appreciate the significance of a papillitis in its relation to infections of both local and constitutional origin and papilladema as the great indicator of increased intracranial pressure.

THE WORK OF NORTH DAKOTA'S PHYSICIANS AND NURSES

By F. R. SMYTH, M. D.

Chairman of the Executive Committee, State Council National Defense
BISMARCK, NORTH DAKOTA

"Take up our quarrel with the foe,
To you from falling hands we throw
The torch—be yours to hold it high.
If ye break faith with us who die,
We shall not sleep, though poppies grow
In Flanders Fields."

As eagerly as the clans in the highlands of Scotland responded to the message of war scattered through the glens and moors by the flaming cross, did the members of the healing guilds take up the torch thrown to them from the falling hands of the heroes who sleep "On Flanders Fields." Fit it was that the call should come from a member of the profession dedicated to the saving of life, who hesitated not to give his own that freedom and justice should live. What greater heritage can any physician leave than the memory that he kept the faith that Dr. John McCrae demanded? What nurse will not consider it a life-long honor to be able to say that she followed in the footsteps of the martyred heroine, Edith Cavell?

With the knowledge that they were going to face a foe by whom not only were the conventions of civilized warfare unheeded, but who boasted that the bombing of hospitals, the torpedoing of hospital ships, and the killing of doctors and nurses were more efficient methods of war than meeting the enemy in open battle, the doctors and nurses of North Dakota responded nobly to the first call for service.

Years may elapse before the history can be given in detail of the numbers and the services rendered by those who, rejoicing in the opportunity, dedicated themselves to the service of their country. In the "Honor Roll" of the *Journal of the American Medical Association*, North Dakota was credited with one hundred physicians commissioned in the Medical Corps of the U. S.

Army, on June 1, 1918. Before the armistice this number was more than doubled, so that it is safe to say that 33 per cent, or one in three, of all the physicians in the state were in service in the Army or Navy.

In April, 1918, it was reported that 20 per cent of the registered nurses in the state were in active service, which was 2 per cent higher than in any other state.

The number of physicians and nurses who saw foreign service is not yet available, as the clerical force in the Surgeon General's Office has been cut down, and other important work has had to take precedence over preparing statistics of the medical service.

When the time comes that the records and achievements of the physicians and nurses of the Great War can be written, it is certain that North Dakota will have reason to be proud of the devotion to duty, the indifference to personal danger, and the self-sacrifice of her representatives.

It is characteristic of the men and women who freely rendered patriotic service, often at great personal sacrifice and without hope of reward, that on their return they make light of the hard work, suffering, harrowing sights, and dangers, through which they passed. They return to their wonted places and duties in civil life, and seek no recognition on the strength of their military service.

That the training they received in the Army will be invaluable to many, cannot be gainsaid, and the people of their communities will reap the benefit. This is particularly true of preventive medicine as on no branch of medical science was more stress laid than on sanitation.

It is a tribute to the skill and efficiency of the medical department of the Army that although the battle death-rate of the American Expeditionary Force, 57 per thousand per year, was the

highest in American history, the disease death-rate, 17 per thousand per year, was the lowest of any of the wars in which the United States has engaged. The disease death-rate (North) in the Civil War was 65 per thousand per year. In the Spanish-American War it was 26 per thousand per year.

General March, in a report issued in February, 1919, said that but for the influenza epidemic the disease death-rate would have been cut in half.

The exact number of medical men in service who were killed or died of wounds is not yet known, but, shortly after the armistice, the list in the Surgeon General's Office showed that over seventy were killed or died in a short period from wounds. In addition there must have been hundreds of doctors and nurses who gave their lives in the service of their country, dying of disease.

The casualty list of the North Dakota contingent, fortunately, was light, but at least one nurse is known to have made the supreme sacrifice, and when the exact toll is made known there will be gold stars on the Honor Banner of both physicians and nurses.

In addition to the men in the Army and Navy, a large number of physicians were engaged in active and indispensable work in the state. One hundred and fifty-three physicians, either as local examiners or members of advisory boards, examined 25,000 men, under the selective service act, and so well was this work done that only 6.38 per cent were rejected at the training camps. The average of rejections for all states was 8.10 per cent.

Few states were so well organized as North Dakota to establish compulsory service of physicians, if it had become necessary. Besides the State Medical Committee, appointed by and under the control of the Council of National Defense, in each local medical society there was an Advisory Committee. In each county there

was a County Representative, appointed by the State Medical Committee.

Reports were prepared for the Surgeon General of the Army, showing the area and population of each county in the state with the number of physicians and the proportion to the population. Every physician in the state was also listed, according to age, physical condition, dependents, and institutional or community needs. A few—very few—who would not reply to requests for information, or claimed exemption on frivolous grounds, may have thought that they fooled the committees, but they themselves were living in a fool's paradise; and, if the war had lasted a few months longer, they would have been rounded up by the draft officials. They may be able to convince the people of the communities in which they live that they were loyal and patriotic, but the men who left all that was dear to them and risked their lives for their country will have no delusions about the patriotism of such men.

Age, sex, physical disability, dependents, or professional appointments were no hindrances to members of the medical profession in rendering help to the Government during the war. For those ineligible for active service the Volunteer Medical Service Corps was established, and to this Corps 218 physicians in North Dakota belonged. Every member signed a pledge to take up any medical or sanitary duty to which he should be assigned and, if the demand for physicians made it necessary, to apply for a commission in active service when requested. No excuse was left for physicians not doing their part in the great struggle.

Truly has Col. Victor C. Vaughan said: "The time will come when there will be only two grades of men in this country, not only in our profession but elsewhere,—the men who went and the men who stayed at home, and, whatever it has cost financially or otherwise, the men who went will have the consciousness of having done their duty and will be the winners in the long run."

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THE UNIVERSITY OF MINNESOTA AND ITS PROBLEMS

The daily press recently surprised the public by announcing the resignation of President Burton, of the University of Minnesota. Since then the press has had almost daily information, explanations, and suggestions for the future of the University.

President Burton goes to Ann Arbor for reasons that have been given, namely, that the opportunity to get in touch with the student body in a completely equipped university is much more to his liking than to spend five or ten years in brick-and-mortar work in Minnesota; and, secondly, because the change means a large increase in salary. Both are very good reasons for the change which Dr. Burton has decided upon. There is no spirit of disloyalty in anything that he has said, and no conditions which any other man in his position would not have considered and accepted. Times have changed so much that the old slogan, that one must look after oneself, is holding the front line, and men who refuse an advance, both in salary and opportunity, are doing not only themselves but their families, and perhaps others, an injustice.

Minnesota has been peculiarly handicapped, first, by the knowledge that, while the University's funds in years to come will be almost unlimited, they cannot be drawn upon at this time, and, secondly, that the Legislature, through Dr. Burton's influence, provided amply for buildings but not for salaries. The amount appropriated is approximately \$560,000 a year. This fund

is available. A third handicap is that the Legislature, and perhaps the University Regents, did not know, nor could they determine, the unexpected inrush of students. The result is, that the University of Minnesota is swamped with new men, and the Regents were obliged to call a halt on those who wished to register because there was no room for their accommodation, insufficient class-rooms, and not enough teachers. Then, too, the salary fund has been growing larger at a very low rate, and not enough money has been asked for to meet the two demands,—an excess number of students and an increase in the salary of instructors. A number of instructors and professors have already resigned in order to accept posts where greater pay was promised, and the probabilities are that with Dr. Burton's resignation and departure a large number of those in the various departments will succumb to offers from other parts of the country. The cost of living has been increased to such a degree that it has hit the University professor very hard, and he must, of necessity and for the safety of his family, receive an adequate sum to make him and his family comfortable.

Naturally, the Academic Department has suffered perhaps the greater loss, but the other departments, including Law, and Medicine, and other specialties, will soon participate in the effects of the blow that is to come. We, as medical men, are particularly interested in the Medical Department, and the dentists are interested in the Dental Department, both of which have, in a large measure, contributed to the popularity of the University of Minnesota; and yet both must suffer the same inability to increase salaries and to increase their physical equipment. It is now conceded that it will be impossible to build sufficient hospitals for clinical purposes, partly on account of the fact that the Legislature makes no provision for the construction of hospitals. The Legislature, further, has refused to provide money for anything but the University Hospital, and that is a hospital of but 192 beds. Then, too, the cost of building has gone to such altitudes that additional buildings, even for the Academic Department, as well as for the Medical Department, are entirely out of the question. The building that four years ago could be constructed at a cost of \$200,000 would now cost approximately \$400,000. And the increased cost of building so affects the Medical Department that it practically prohibits the Regents from enlarging the clinical side of the Department, except with the assistance and aid of the hospitals of the Twin Cities.

The Medical School is really in a critical condition, and it needs the services, not only of the surgeon and physician, but of every specialist in the Twin Cities. Then, too, there have been many changes in the methods of teaching, all of which have suffered more or less from the handicaps above mentioned. It was thought at one time that a hospital might be constructed with funds obtained through private contributions, either inside or outside the University Campus; but, if inside the University Campus, it would have to be under the control of the Board of Regents, and, if outside of the Campus, it must, of necessity, be an open hospital.

Of course, the raising of a fund, for example, a million dollars and an additional million dollars for maintenance and upkeep, looks like a difficult problem, unless some of the big foundations, like the Rockefeller or the Carnegie, come to the rescue, yet even if the hospital is built by public contributions, and not privately, the University will not have funds to maintain it on account of the action of the Legislature.

"GRADUATE" AND "POSTGRADUATE"

A correspondent who is far from being an ignoramus, although he signs himself such (see page —), asks us the difference in meaning between the above two words in common use in medical writings, one of which is not found in the dictionaries, at least in its new use.

We referred the question to Dean Ford of the University Graduate School, and he answers it entirely satisfactorily, and yet he does not point out why the new word has worked its way into medical literature, nor can we agree with his statement that "graduate" is a more proper word than "postgraduate" and is destined to supplant the latter word.

The word "postgraduate" has long been used in medical literature almost exclusively as an adjective to designate studies, or work, pursued by a medical man after graduation and after more or less practice, as well as to institutions where such studies are taught. These "postgraduate" schools are, with few exceptions, mere polyclinics, where the rusty practitioner can take a short course (from a month to a year) in medicine or surgery, or where, only too frequently, he can make himself a "specialist," for his theory is that *specialists* are made, not born, although the two processes require about the same length of time.

As the world's medical knowledge broadened, a demand arose for a longer and, as Dean Ford points out, a thoroughly scientific course of in-

struction with some research work. The research work is not done necessarily, or even mainly, for the sake of possible new discoveries, but for its training value to the student, thus fitting him for the scientific practice of medicine and qualifying him to gather in his daily practice scientific data (more properly, data scientifically gathered) needed by all research workers.

Thus the genesis of the word "graduate" is found in the need of a word to designate a new kind of work. This work is, almost of necessity, an immediate or, at least, an early continuation of the regular medical course, with or without a year's internship.

If our interpretation of the meanings of these two words is correct, the new word will long connote a degree of progress in medicine greater than at any period in the past, and the "postgraduate" schools will adopt names that fully characterize their work.

A NEW EPIDEMIC

It was predicted, in 1918 and in 1919, that there would be a renewal of the influenza epidemic this year, but the prediction has not been entirely or definitely fulfilled. That there is an epidemic, however, throughout the country there can be no doubt, and it invades not only the North, but the South and the West, as well. It has assumed rather strange forms in that there is nothing very classical in the way of symptoms in the majority of patients who have the new form of illness. For instance, in a small town in Southern Minnesota a sudden epidemic developed among a restricted number of people, in fact, largely among two related families, and up to the present five deaths out of nine cases have been reported. The majority of those who died did so within twenty-four hours, and were apparently perfectly well part of one day and were taken sick and died the following day. Those who recovered went through a slow, irregular process. Most of these cases had the typical or cardinal signs of a meningitis, but the clinical findings were the only things that were in evidence. There were no findings in the spinal fluid that would warrant a diagnosis of meningitis. The conclusion of the investigator, Dr. C. E. Nixon, was that these were probably all cases of encephalitis. Those who died evidently had a virulent toxin. In one case staphylococci were found and in another case a Gram-positive organism was cultured in broth from the first fluid, but was absent in later fluid examinations.

The disease was evidently a contagious one, for

it occurred in families that were closely related, and were very closely associated.

Aside from this epidemic there is apparently a wave of something going over the country which resembles a mild form of influenza, but, so far, the physicians have hesitated about using this term, partly because the majority of cases were not typically influenzal, and partly to allay fear in the mind of the public. That there are some cases of influenza there is no question. However, the majority of these patients who are suffering from a bacterial or toxic disorder have a mild form which resembles common colds, or what we formerly termed "la grippe." There may be a sudden development with a sudden rise in temperature, and the following day the temperature is gone, and the patient is practically well. How long he will remain well is for the future to decide. In other cases the patients complain of general muscle ache and have moderate rise of temperature, with throat and bronchial or nasal irritation, occasionally with irritation of the conjunctiva, and not infrequently a disease or pseudo disease of the middle ear. These people are sick for some days, and they have frequent relapses.

No toxin has been discovered as yet that is a causative factor, and the likelihood is that some mixed or unrecognized bacillus is responsible for this recent outburst. On account of the difficulty of recognition and classification of this epidemic as influenzal, the physicians have not been giving injections of anti-influenzal serum. They are withholding judgment, evidently, and in that way will help clarify the epidemic atmosphere.

The majority of these cases are best treated by rest, a clearing laxative, and the administration of plenty of food and a good rigid tonic. The one hesitating therapeutic measure is whether these patients should be allowed to get up within a reasonably short time or should be detained for several days. Of course, many patients get up without regard to their possible pathology. They are obliged to get up, they are obliged to work, and it is noted in many instances that this seems good therapy. But in cases in which there seems to be a virulent toxin and the slow development of pulmonary diseases it is wiser to keep the patient in bed. Not a few cases of pneumonia have developed, but they are not clinically true. The physical signs are sometimes almost entirely wanting, and patients who seem to have a small portion of the lung involved are often far more ill than those who have a single or double pneumonia. If the present epidemic continues, doubt-

less we shall know more about it before the winter is over.

VERDICT AGAINST A HOSPITAL

A verdict of \$6,000 has been recently awarded the relatives of a patient who, while suffering from delirium and occupying a room on the second floor of a hospital, being left alone for a short while, jumped out of the window and was killed.

Very few hospitals have escaped such acts on the part of patients. Not infrequently patients with typhoid fever and pneumonia, or other pathological disorders, become delirious, perhaps unexpectedly so, and occasionally a patient who is in the hospital because he is depressed suddenly develops an irresistible impulse, which he obeys, and attempts to escape his imaginary enemies by jumping through a window. Usually, however, these hospitals, even though they are general, secetarian, or private hospitals, do a sufficient amount of charity work to bring them really into the eleemosynary field, and they cannot be classed then as hospitals for gain only. Of course, such accidents are very unfortunate and distressing, and no one would for a moment accuse the hospital of insufficient vigilance except in unusual cases. An accident of any sort occurring in a hospital is always looked upon as a disgraceful affair, and particularly by lay people. Physicians, of course, know that accidents, suicides, and things of that sort are sometimes unavoidable.

This verdict against a hospital, and its publication, will probably have a far-reaching effect, and hospitals will either endeavor to keep closer watch of their uncertain mental cases or the deliriously sick cases than ever before. This may mean, however, that the hospital will demand that every suspected case be in the charge of a special nurse, which means an additional amount of money that the patient or his friends must pay.

It is not an unwholesome procedure, neither is it a cruel one, to have these patients more or less anchored in bed by putting on a smooth and non-irritating anklet and fastening it to the frame of the bed. This makes it impossible for the patient to get out of bed and jump out of his window. Although such patients may get into strained positions sometimes, they are far safer than when lying on the ground dead. Of course, there has been a great evolution in the treatment of delirious patients. They are treated, first, by

being put in charge of special nurses, but even special nurses must have their time off and, after all, the responsibility falls on the hospital and its own nursing force. Then, too, the old idea of mechanical restraint has been abolished in a great many instances, and, instead of this, the warm bath, foods, and mild sedatives are employed to protect the patient, as well as the hospital. But we sometimes go too far in our evolution, and particularly in this age when everything is more or less chaotic and when hospital management is not always up to standard.

The Supreme Court has passed on the case under consideration, and it presumably means that the verdict will stand. But it is a very unhappy condition to contemplate, and it will impose a further, and perhaps necessary, burden upon hospital authorities to protect their patients.

SOME CLINICS WORTH VISITING

The Medical School of the University of Minnesota has prepared a two-day program of medical and surgical clinics for the outside physicians who will be brought to the Twin Cities for "Automobile Week."

The program itself, which is published on another page, will show what the staff of the School has attempted to do; and the visiting physicians may be assured that the whole staff will do all in their power to make the visit of every man pleasant and profitable.

The automobile show will be a great one and full of interest, but the medical school program will prove far more interesting and valuable to almost any physician, especially to all who have not visited, in recent years, the clinics and laboratories of a great medical school and its hospital and dispensary.

HEALTH AGENCIES EXHIBIT

Four Minneapolis public-welfare agencies,—the Anti-Tuberculosis Committee, the Visiting Nurses' Association, the Associated Charities, and the Northern Division of the Red Cross,—are exhibiting their work at the Twin City Automobile show now in progress in the Overland building.

The public-health and relief work of the four organizations is well represented by sixteen "living posters," human figures posed to typify some phase of welfare activity. The constructive program of the Anti-Tuberculosis Committee in combating disease and building up community health through education, publicity, and demonstrations

is typified by a large double red cross built of blocks, which are labelled with items of the committee's program. A striking figure is that of Uncle Sam posing in the attitude of Rodin's "The Thinker," and contemplating a placard which announces that every tenth person in America dies of tuberculosis.

The Red Cross exhibits eight posters setting forth their peace-time program of public-health nursing, home hygiene, care of the sick, home service, first aid, vocational training, and the work of the Junior Red Cross.

The work of the Visiting Nurses' Association in caring for children and visiting shut-in patients is illustrated by appropriate posters.

The two-fold mission of helping families and showing them the way to help themselves forms the subject of the Associated Charities' exhibit.

"BIDS WANTED"

The usual grist, usual as to time, character, and size of "bids wanted," is to be found in the country newspapers of December. They read, almost uniformly, as follows:

"Bids wanted from resident physicians of — county for medical and surgical treatment for the sick and infirm at the county farm, and such persons as may be confined in the county jail during the year 1920."

Let it be noted that the *usual* reservation in the advertisements of the strictly business matters is not found in our quotation, and is not often found in any such advertisements.

That reservation permits the commissioners "to reject any and all bids." The lowest bidder gets the job of treating the unfortunates, deserving and otherwise, on the "farm" or in the jail.

The bids for service of this kind, including medical supplies, in a county in Montana, recently published, ran as follows: \$719, \$989, \$1,185, \$1,200, \$1,495, \$1,500, and \$2,000.

The lowest bid (\$719), about one-third the highest, got the job.

Is this civilization?

CORRESPONDENCE

"GRADUATE" AND "POSTGRADUATE"

TO THE EDITOR:

Will the editor of THE JOURNAL-LANCET be kind enough to tell its readers the difference in meaning between the words "graduate" and "postgraduate"? Learned or "polite" writers

seem to make a distinction in the use of the words, and I want to join the ranks of such writers, whichever class they belong to.

Respectfully,

AN IGNORAMUS.

We have sought the information desired by our correspondent from Dean Ford, of the University, and his answer is given herewith. In the absence of any information furnished by any of the several dictionaries consulted, we make, in our editorial columns, a guess at the probable development of these words, and also comment on the genesis of the word "graduate" in the new use.

ANSWER BY DEAN FORD

TO THE EDITOR:

The difference between the meanings of the words "postgraduate" and "graduate" is a relatively recent one. Postgraduate is the original word which was used to cover practically any type of work taken after the undergraduate degree, that is, it was strictly post-degree work and no distinctions were made as to its character.

That use of the word is still common. For instance, I have a letter on my desk from a prospective student who, of course, represents the current generation, who uses the word "postgraduate," and I noticed that in this month's *Atlantic* a writer who is evidently of the last generation, also uses the word "postgraduate" in the sense in which we now more accurately say *graduate* work; i. e., this post-degree work has gradually shaped itself into work of two kinds, that which is now more frequently and accurately called *graduate* work. This "graduate work" is distinctly advanced in its character over anything taken in the undergraduate work, and has for its purpose more definitely scientific training and the development of research methods and attainment of results which, in at least a modest sense, may be considered as his addition to human knowledge. Not all courses listed in our, or in any, graduate school bulletin, will conform to this definition, but somewhere in the program of each graduate student we aim to put graduate work of this type, represented in at least one seminar or laboratory course.

The second group of courses for which the word "postgraduate" might still properly be retained is more common in the medical school groups, and means, usually, either review courses or courses of an undergraduate character which the M.D. did not have the opportunity to take in his undergraduate work. In general, these courses are not so shaped as to have the research element uppermost, nor do they for that reason qualify the student ultimately for the advanced degree. It is of course possible that in some medical schools using "postgraduate" for a group of courses, there may be those which have some element of training in original methods for securing new results.

You can easily see from my statement that the usage in the matter is not wholly fixed nor the definitions absolutely mutually exclusive. I think I have given you what represents a growing distinction, and I feel fairly sure that the word "postgraduate" is practically going out of use except as it is applied now primarily in

certain types of medical work of what might be more accurately called simply post-degree character.

Sincerely,

GUY STANTON FORD,

Dean of the Graduate School of the University of Minnesota.

MISCELLANY

AN APPRECIATION OF DR. LEONARD CHARLES MEAD

On the evening of January 13, within five days of having reached his sixty-fourth year, Dr. Leonard C. Mead, for thirty years Superintendent of the State Insane Asylum at Yankton, South Dakota, passed away. It was my good fortune for more than thirty years to be intimately acquainted with him, one of the noblest physicians in the state. As a citizen, Dr. Mead was one of the foremost men in South Dakota; as a physician, he was recognized as one of the leading authorities on mental diseases in the United States. No man in this state worked so faithfully, "in season and out of season," to accomplish the great life-work he had planned, always maintaining his high standard of moral excellence.

Coming to the State Hospital in 1890 as Assistant Superintendent, the next year Superintendent, he adopted a constructive policy which made this institution one of the best in the world, everything pertaining to it being worked out to its minutest detail. Dr. Mead was one of the most skilled men in this country in the construction of large buildings. Under his far-seeing policy, building after building arose symmetrically arranged and constructed under his personal supervision.

Some months ago, apprehensive that the end of life was not far off, he requested of the Governing Board that he might be buried within the grounds of his beloved institution. This request was granted. How appropriate that the end of his active life should come among these beautiful buildings,—his own heart and blood!

Some years ago, standing in the crypts of St. Paul's Cathedral in London, among the tombs of the mightiest men of Great Britain, I saw a plain slab marking the tomb of Sir Christopher Wren, the architect, a noted builder of two centuries ago, with this simple Latin inscription: "SI MEUM MONUMENTUM REQUIRIS, CIRCUMSPICE,"—"If you seek my monument look around." What

epitaph more befitting Dr. Mead's last resting-place.

No man builded a better monument than Dr. Mead, not only in the beauty and arrangement of the many buildings, but far more in the fact that within these walls was carried out the most sympathetic and humane treatment of the unfortunate insane. As I passed along the road leading up from the city of Yankton to the Institution these words of Tennyson's "In Memoriam" recurred to my mind.

"I climb the hill: from end to end
Of all the landscape round about,
I find no place that does not breathe
Some gracious memory of my friend."

F. A. SPAFFORD, M. D.

Flandreau, S. D.

CLINICS AT UNIVERSITY OF MINNESOTA MEDICAL SCHOOL

PROGRAM FOR PHYSICIANS' DAYS

Thursday, February 5th, a. m.

8:30-10:45 Surgical Clinic

Drs. A. MacLaren and A. C. Strachauer
(large operating-room, University Hospital)

Surgical Clinic, ophthalmology.....

Dr. W. R. Murray
(small operating-room, University Hospital)

Cystoscopic demonstration, including
pyelography and allied procedures....

Dr. F. A. Olson
(dressing-room, first floor, University Hos-
pital)

10:45-12:15 Gynecological clinic.....

Drs. J. C. Litzenberg and W. H. Condit
(large operating-room, University Hospital)

Urology.....Dr. F. R. Wright
(small operating-room, University Hospital)

9:00-12:00 Demonstrations in Surgical Laboratories

Dr. J. F. Corbett
Surgery of the peripheral nervous system,
nerve-suture, intestinal suture, etc.

10:30-12:00 General Surgery.....Dr. J. A. Johnson
(University Dispensary)

Obstetrics.....Dr. R. T. LaVake
(University Dispensary)

11:00-12:00 Pediatric Clinic.....

Drs. F. W. Schultz and Max Seham
Luncheon—Minnesota Union.

1:00- 2:00 Staff Rounds.....Medical Staff
(University Hospital)

1:00- 2:00 Medical Dispensary—

General Medicine....Dr. J. P. Schneider
Gastro-intestinal.....Dr. C. B. Wright
Heart.....Dr. Olga Hansen
Nervous and Mental, Dr. Angus Morrison

1:00- 2:00 Skin Clinic (Dispensary).....

Drs. H. G. Irvine and G. M. Olson

2:00- 3:00 Medical Clinic.....Dr. L. G. Rowntree
(Lecture room, University Hospital)

Pediatric Clinic.....Dr. F. C. Rodda
(operating-room, University Hospital)

3:00- 4:00 Ward Rounds (University Hospital)..

Nervous and mental...Dr. A. S. Hamilton

Pediatrics.....Dr. Rood Taylor

Medicine.....Dr. R. I. Rizer

4:00- 5:00 Demonstrations in Medical Laboratories

Medical House Officers

(University Hospital)

Grouping of blood.

Alveolar CO₂ and phthalein test.

Benedict for sugar.

Basal metabolism.

8:00 University Medical Society, Institute of
Anatomy—

Influence of atmospheric humidity...

Dr. E. P. Lyon

Gastric capacity of children.....

Dr. R. E. Scammon

Local anesthetics...Dr. A. D. Hirschfelder

Demonstration of interesting specimens

Department of Pathology

9:30 Laboratory Demonstrations—

Anatomy, bacteriology, physiology, path-
ology, pharmacology.

Friday, February 6th, a. m.

8:30-10:45 Surgical Clinic

Drs. A. A. Law and H. P. Ritchie
(large operating-room, University Hospital)

9:00-10:00 Ward Rounds (University Hospital)..

Surgical Staff

8:30-10:45 Rhinology—Operative Clinic.....

Dr. H. S. Clarke
(small operating-room, University Hospital)

10:30-12:00 General Surgery (University Dispen-
sary).....Dr. E. C. Robitshek

10:45-12:30 Gynecological Clinic....Dr. J. L. Rothrock
(large operating-room, University Hospital)

Obstetric Demonstration.....

Dr. J. C. Litzenberg
(small operating-room or ward, University
Hospital)

Luncheon—Minnesota Union.

1:00- 2:30 Medical Dispensary—

General medicine.....Dr. C. R. Drake

Gastro-intestinal....Dr. F. H. K. Schaaf

Tuberculosis.....Dr. F. W. Wittich

1:30- 2:30 Skin Clinic (Dispensary).....

Drs. S. E. Sweitzer and J. Butler

2:00- 2:30 Urology—Cystoscopic Demonstrations..

Dr. G. J. Thomas

(University Dispensary)

2:00- 3:00 Medical Clinic (University Hospital)—

Medicine.....	Dr. S. M. White (lecture-room)
Nervous and mental..	Dr. A. S. Hamilton (operating-room)
3:00- 4:30 Ward Rounds (University Hospital—	
Medicine	{ Dr. C. E. Nixon { Dr. E. T. F. Richards { Dr. A. H. Beard
Pediatrics.....	Dr. N. O. Pearce
4:30 Clinical Pathological Conference (Insti- tute of Anatomy)—	
Clinicians.....	
	Drs. H. E. Robertson and E. T. Bell

THE DECLINE OF SOME DISEASES

The Minneapolis Health Department has compiled some figures as to the decline of some diseases that are full of interest and encouragement. As they cover a period of three decades (two decades in the case of the infant death-rate), they probably are to be depended upon as thoroughly reliable; and we give them because of this dependability:

DECLINE OF SOME DISEASES

A résumé of the decline of the following diseases by decades and years since 1890 is of interest. The decline in each particular instance is due to a combination of causes:

TYPHOID FEVER

1891 to 1900	Average deaths per year per 100,000 population	49.
1901 to 1910	Average deaths per year per 100,000 population	34.3
1911 to 1919	Average deaths per year per 100,000 population	8.5
1919	Average deaths per year per 100,000 population about	4.

DIPHTHERIA

1890 to 1899	Average deaths per year per 1,000 population .....	.43
1900 to 1909	Average deaths per year per 1,000 population .....	.33
1910 to 1918	Average deaths per year per 1,000 population .....	.23
1919	Average deaths per year per 1,000 population about .....	.165

TUBERCULOSIS

1890 to 1899	Average deaths per year per 1,000 population	1.28
1900 to 1909	Average deaths per year per 1,000 population	1.09
1910 to 1918	Average deaths per year per 1,000 population	1.05
1919	Average deaths per year per 1,000 population about .....	.97

INFANT DEATH RATE UNDER ONE YEAR

1900 to 1909	Average death-rate per 1,000 births	88.2
1910 to 1918	Average death-rate per 1,000 births	74.2
1919	Average death-rate per 1,000 births about	66.5

Population for 1919 is based on an estimation of 393,500.

BOOK NOTICES

THE SURGICAL CLINICS OF CHICAGO, Volume 3, No. 4, (August, 1919). W. B. Saunders Company, 1919. Published bi-monthly. Price, per year: paper, \$10.00; cloth, \$14.00.

The August number of "Surgical Clinics" is replete with fine clinical material, ably presented by some of the best known clinical teachers. The articles are short and pithy, and easily read; and the principles and facts are so clearly stated as to leave well-informed impressions on the reader not easily forgotten.

As was to be expected, much of the material is founded on war experience in the management of war wounds. Dean Lewis writes on peripheral nerve surgery, and his article is well illustrated. C. C. Nesselrode, in his clinic on "Bone Grafts for Cranial Defects," mentions the "trephine syndrome," and favors osteoperiosteal grafts as being in every way superior to grafts of any other kind.

D. B. Phemister's article on "War Wounds of Bones" is of much value. Drs. F. K. A. Norris and Rudolph S. Reich discuss the "Fate of Foreign Bodies in Tissues," and advocate removal only when they produce symptoms or are lacerated in an infected field.

A. D. Bevan, in his clinic, presented and operated on a cyst-adenoma of the liver, which is a rare pathological condition.

Eisendrath, in discussing the "Diagnosis of Abdominal Tumors," emphasizes the value of (1) a careful clinical history, (2) the physical examination, and (3) special methods of diagnosis, such as skiagraphy, pyelography, blood and Wassermann tests, etc. His article is well illustrated.

T. L. McWhorter reports, with necropsy-findings, a huge sarcoma of the stomach apparently traumatic in origin, and reviews the literature.

The first clinic presented, that of Charles B. Reed on "Management of Breech Presentations," is very instructive. To one not skilled in obstetric diagnosis it is quite startling to find ante-partum estimates of fetal length and weight so closely verified post-partum, the variations in length in one case being nil and in the other only 0.25 cm.

Taken as a whole, the volume will repay careful reading and study.

H. B. SWEETSER, M. D.

NEWS ITEMS

Dr. I. M. Linsin has moved from Tioga, N. D., to Welden, Colo.

Dr. W. H. Moore has moved from Sykeston, N. D., to Luverne, N. D.

Dr. J. F. Garrison has moved from Oldham, S. D., to Inglewood, S. D.

Dr. C. C. Craig of International Falls, has been reappointed county physician of Koochiching County.

Dr. F. A. Richards has moved from White-wood, S. D., to Sturgis, S. D.

Dr. T. A. Clifton has moved from Minne-
waukan, N. D., to Isanti, Minn.

Dr. G. T. Haywood, of Forsyth, Mont., was married last month to Miss Ethel Drake, of the same city.

Dr. W. W. Lindsay was chosen city physician of Winona last month, and was already county physician.

Dr. John Abbott, of St. Paul, has been appointed assistant to Dr. B. F. Simon, city health officer of St. Paul.

Dr. G. A. Carpenter, of Fargo, N. D., has been elected health officer of Cass County to succeed the late Dr. E. M. Darrow.

Dr. Glen Jones, of Custer, S. D., has gone to Denver, Colo., for a special course in surgery at St. Joseph's Hospital of that city.

Dr. J. W. Bowen, of Dickinson, N. D., has been, only recently, in three dangerous automobile accidents, each time without blame on his part.

Dr. C. D. Kolset, of Benson, has been appointed acting assistant surgeon and medical examiner for Swift County in the U. S. Public Health Service work.

Miss A. Jeanette Christianson, for many years superintendent of the Northwestern Hospital of Minneapolis, has resigned, and will go to California.

Dr. P. F. Holm of Minneapolis, has gone to Chicago to visit the clinics of the city, and will go to Cuba and California for a rest, returning to Minneapolis in April.

Although Duluth can see "water, water everywhere," and "Superior" water, too, the city is disturbed over its water supply, which is too near the city sewer outlets.

Dr. Caryl B. Storrs, who has been the dramatic critic of the *Minneapolis Tribune* for many years, and who died last month, practiced medicine in Michigan for ten years.

The February issue of the *American Journal of Surgery* will be composed wholly of articles on surgery of the rectum and colon; and the articles will be by eminent proctologists.

Bemidji is one of the most progressive cities of Minnesota along public-health lines. Its baby clinics are especially successful. The one held last month was managed by Dr. N. O. Pearce, of Minneapolis.

Dr. Egil Boeckmann, of St. Paul, and Dr. C. L. Scofield, of Benson, were re-elected last month president and vice-president, respectively, of the Minnesota State Board of Health.

Dr. Leo Rigler has charge of the practice of Dr. G. A. Sarchet, of New England, N. D., while Dr. Sarchet is in California. Dr. Rigler is a recent graduate of the University of Minnesota.

The Mounds Park Sanatorium, of St. Paul, has purchased the Midway Hospital, in another part of St. Paul, and several acres of ground in still another part to meet the future needs of the Sanatorium.

Dr. F. E. Harrington who is acting health officer for Minneapolis, and will make a thorough survey of the city, has asked the United States Public Health Service for an assistant from the office of the Health Service.

A public-spirited citizen, of Minneapolis, Mr. Howard W. Baker, who recently died in California, left the Medical School of the State University \$40,000 in compliment of his close friend, Dr. A. A. Law, of Minneapolis.

The physicians, surgeons, dentists, and public-health workers of Minneapolis who were in service in the late war, have organized a club, without a name, but with officers as follows: President, Dr. F. E. Haynes; secretary, Dr. C. E. Henry.

A damage suit brought against Dr. W. H. Magie, of Duluth, for faulty surgery was dismissed by the judge when the plaintiff's evidence was put in. Why will attorneys take such cases? They are, with few exceptions, absolutely disreputable.

In 1887-88 Minneapolis had an epidemic of so-called "winter cholera" with nearly one hundred thousand cases, but only forty-two deaths. Another widespread epidemic of colds or mild influenza is imminent now, apparently with no serious after-effects.

Dr. W. E. List, the new superintendent of the Minneapolis City Hospital says the watchword of the hospital will be "efficiency," which means, according to Dr. List's idea, "doing the right thing at the right time without confusion for the good of the hospital."

At the annual meeting of the Cass County, (N. D.) Medical Society, held in Fargo last month, the following officers were elected: President, Dr. P. H. Burton, Fargo; vice-president, Dr. W. C. Nichols, Fargo; secretary-treasurer, Dr. A. Oftedahl, Fargo.

Dr. Charles A. Bower, of Mitchell, S. D., was drowned in Florida ten days ago. Dr. Bower was forty-five years of age, and had practiced in Mitchell about twenty years. He was a member of the S. D. State Board of Health, and a member of the Mitchell City Council.

Dr. H. H. Judd has been appointed city physician of Bozeman, Mont., and Dr. E. C. Kading, of Deer Lodge, is the county health officer of Gallatin County, in which Bozeman is situated. Last year the city and county had a full-time health office; this year they take a step backward.

The Winona County Medical Society held its annual meeting last month, and for the first time in thirty years did not see Dr. J. B. McGaughey acting as secretary. The following officers were elected: President, Dr. C. A. Lester; vice-president, Dr. Samuel Schaefer; treasurer, Dr. I. W. Steiner; secretary, Dr. C. D. Robbins; delegate, Dr. B. P. Rosenberry.

The undergraduate students of the Medical School of the University of Minnesota have organized the Medical Six o'Clock Club, and elected officers as follows: President, H. D. Bessessen; vice-president, R. H. Lindquist; secretary, Miss Frances King; treasurer, Miss Magdalene Huchthausen. All the members of the medical faculty are eligible to membership in the club.

Dr. F. E. Harrington, who is acting health commissioner of Minneapolis, is reported as saying that communicable diseases are too prevalent in Minnesota, and are due to the failure of physicians to diagnose such diseases correctly or to failure to report them. We suggest that Dr. Harrington consult Attorney Deutch about it, for he is the legal and medical expert of the "Scientists."

The St. Louis County Society is one of the few live medical societies in Minnesota. It has at almost every monthly meeting an outside man to give a talk or read a paper. At the January meet Dr. A. W. Morrison, of Minneapolis, and Dr. A. N. Collins, of Duluth, presented papers; and they were papers worth hearing, while the discussions on the same increased their value and interest.

The Richland County (N. D.) Medical Society held its annual meeting last month at Wyndmere, N. D., when officers for the current year were elected as follows: President, Dr. I. C. J. Wiig, Wahpeton; vice-president, Dr. Sherman Ripper-ton, Wyndemere; secretary-treasurer, Dr. T.

O'Brien, Wahpeton. At its next meeting the Society will invite the physicians of surrounding counties to meet it.

Dr. F. M. Ghent, of St. Paul, presented a paper on diseases of the gall-bladder before the Park Region District Medical Society at its meeting last month held at Fergus Falls; Dr. W. P. Green, of the State Board of Health spoke on the State's fight against typhoid fever. Officers were elected for the current year as follows: President, Dr. W. A. Lee, Underwood; vice-president, Dr. A. M. Randall, Ashby; secretary-treasurer, Dr. Frank Naegeli, Fergus Falls.

The University of Minnesota Medical School is anxious for the physicians of the state to realize that the faculty of the Medical School is desirous to serve the needs of the profession of the state as well as those of under-graduate students. The Physicians' Days, of which the program is given in another column, are arranged in order to make it possible for the physicians of the state to keep in touch with the work of the University. All physicians will be made welcome.

The annual meeting of the Huron (South Dakota) Medical Society was held at President Taylor's office on January 8, when the following officers were elected for 1920: President, Dr. Benj. Thomas, Huron; vice-president, Dr. J. C. Shirley, Huron; secretary-treasurer, Dr. L. N. Grosvenor, Huron; delegate, Dr. E. B. Taylor, Huron; censor for three years, Dr. Earl Crafts, Carthage. The topic for discussion, "Obstetrics," drew out a very interesting discussion.

Three additional public-health nurses for Hennepin County, Minnesota, making a total of five, were provided for at the last meeting of the Anti-Tuberculosis Committee of Minneapolis. An appropriation from the Red Cross will pay salaries and expenses of the nurses, who will work under the auspices of the Visiting Nurses' Association, the Anti-Tuberculosis Committee, the County Superintendent of Schools, the Red Cross, and the University of Minnesota.

Dr. Leonard C. Mead, of Yankton, S. D., died on January 13, at the age of 64. Dr. Mead was a graduate of Rush, and was always a persistent student of medicine and had taken several post-graduate courses. He was superintendent of the South Dakota State Hospital for the Insane at Yankton for thirty years, and was a recognized leader in such work. He was greatly beloved in his state by all medical men and general citizens. His death means a great loss to the state. An

appreciation of Dr. Mead by Dr. F. A. Spafford, a South Dakota friend for many years, appears on another page.

Grand Forks County, N. D., is divided into eight health districts, each district, except Nos. 1 and 8, has a health officer, whose salaries run from \$75 to \$675, the latter salary being paid by combined districts Nos. 1 and 8. The following are the health officers of the County: Dr. T. Mulilan, Grand Forks; Dr. A. Y. Thompson, Larimore; Dr. J. C. Smith, Thompson; Dr. R. M. McLean, Gilby; Dr. B. D. Lemery, Inkster; Dr. M. T. Savre, Northwood; Dr. C. A. McKay, Emerado.

With the view of consolidating all the voluntary health agencies of Minneapolis, a joint committee representing the various organizations is working on a constitution for such a consolidation. Agencies represented in the project are the Anti-Tuberculosis Committee, the Visiting Nurses' Association, the Infant Welfare Society, the Health Committee of the Civic and Commerce Association, the Health Committee of the Central Council of Social Agencies, the Children's Committee of the Woman's Community Council, and the Northern Division of the Red Cross.

Dr. H. F. Kenney, of Pierre, S. D., who served as a major in the First South Dakota Cavalry on the Mexican Border, and was afterwards transferred to the 134th Infantry in France, thence transferred to a Belgian Camp, in all of which branches of the service he served with distinction, has been nominated as State Senator to represent Hughes and Sully Counties in the next Legislature. Dr. Kenney has had unusual advantages in all matters pertaining to the health and sanitation of troops in the field, and will be a most valuable friend in all matters pertaining to the public-health service of the State.

The Sioux Valley Eye and Ear Academy held its fourteenth semi-annual meeting at Sioux City, Iowa, on January 20. The attendance was good, and the program excellent. The guests of the society who presented papers were C. C. Bunch, Ph. D., and Dr. L. W. Dean, of Iowa City; Dr. A. H. Andrews, of Chicago; and Dr. J. D. Lewis,

of Minneapolis. Dr. Bunch presented his Pitch Range Audiometer, the development of which, during his student work at the University of Iowa, gave him the Ph.D. degree. This ingenious and very valuable apparatus was described in our issue of October 15, 1919, by Prof. Carl E. Seashore, of that University.

PHYSICIAN WANTED

Dickey, N. D., is in need of a good physician, and the location is a good one. The population of the village is 250, with a surrounding territory of twenty miles, including a number of small towns. Full information can be obtained of Earl Scea, Village Clerk, Dickey, N. D.

SUBSTITUTE PHYSICIAN WANTED FOR ONE YEAR

A young physician is wanted to take a doctor's practice in South Dakota for one year. State experience, from what school graduated, and salary wanted. Address 308, care of this office.

PHYSICIAN WANTED

Kensington, a growing village in Douglass County, Minn., needs a physician, Scandinavian preferred. Territory is large and very rich, all collections practically 100 per cent. For any information desired, address E. T. Bjorklund, Kensington, Minn.

OPENING WANTED

A physician with excellent experience in general and emergency surgery, also general medicine, desires an opening in one of Minnesota's larger cities. Aged 39; married; best of references as to character and ability. Will consider contract or hospital work; partnership; association or good location. A reasonable investment will be made. Address 309, care of this office.

POSITION WANTED IN PHYSICIAN'S OFFICE

By a young woman of 23 who has been in a drug-store for a year and a half doing the prescription work and assisting a surgeon in his minor surgery in his office and hospital. Has a good education and can keep books and do typewriting, but not short-hand dictation. Will give the best of references. Permanent work wanted. Address 310, care of this office.

A SCHEIDEL-WESTERN COIL FOR SALE

For sale cheap on account of purchase of larger outfit, a 12-inch Scheidel-Western coil, a controller, a mercury interrupter with two interchangeable mercury pots, two Tungsten target tubes. All in good working order for fluoroscopic work. Address or call upon Dr. F. W. Wittich, 1035 Metropolitan Building, Minneapolis.

The thought behind
the tube—
'the patient on the table'



Not "good enough" but the best from every standpoint—
alone assures that degree of "Catgut Safety" demanded when
the patient on the table is "ONE OF MY OWN FAMILY!"
Only on this peculiarly personal basis is

"Van Horn" Catgut

supplied to the profession.

Johnson & Johnson

VAN HORN and SAWTELL DEPARTMENT,
NEW BRUNSWICK, N.J.

MERCURIAL GRAY OIL \$1.50

A valuable adjunct to intravenous medication in the treatment of syphilis. Put up in syringes, ready for use. Credit 50c upon return of syringe.

Wassermann test.....\$5.00

Autogenous Vaccines 5.00

Tissue Diagnosis..... 5.00

All other laboratory tests at reasonable rates.

Anti-Rabic Virus-Harris.....\$25.00

Fee list and containers with directions sent gratis on request.

The National Pathological Laboratories

(Incorporated)

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5 South Wabash Ave.

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University Club Bldg.

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18 East 41st Street

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Consultation Work Exclusively

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Forty-five members of the Alpha Kappa Kappa medical fraternity spent a day recently going through the Chicago plant of Armour and Company.

A special program was arranged in their honor, and they were shown through several departments which are not on the regular visitors' route, but which were considered of special interest to them as medical men. They were guests of Lester Armour.

Before going over the packing-house route, the members of this medical fraternity were served with bouillion at the visitors' reception room. On the completion of their journey through the plant they were escorted to the chipped-beef department where a buffet luncheon was served. In the meantime they were shown the various processes of converting meat animals into meat products.

The visitors expressed themselves as being particularly interested in the trip to the U. S. Government Inspector's office, where Dr. J. H. Wheland explained the activities of the Bureau of Animal Industry. Dr. Frederic Fenger of the chemical laboratory told of the work of his department and also of the important part played by chemistry in the meat product industry. Dr. Volney S. Cheney, medical director of the company, described the work of Armour's medical department in safeguarding the health of all employees.

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For many years it was comparatively easy for the laity to purchase narcotics. This produced many habits of opium and its alkaloids and likewise cocaine. Very drastic legislation became necessary to curb this evil. One result of this is that physicians, who have always been very scrupulous in their use of narcotics, often find it quite inconvenient to prescribe what they regard as legitimate and entirely necessary amounts of narcotic drugs, particularly opiates.

Physicians, however, are coming to realize that opiates are more or less dispensable in many conditions where they have heretofore been considered necessary. They have been casting about for the most suitable substitutes that could be prescribed without restriction by law, that would not tend to habit formation.

In this connection it is gratifying to note the co-operation offered by Eli Lilly & Company in the way of a vest-pocket reference entitled "Standard Anodynes, Sedatives and Hypnotics." In this edition there are more than ninety items mentioned which are non-narcotic, but which may be employed for anodyne, sedative or hypnotic effects. Others are listed which contain small amounts of opiates, but require a federal record of sale only. This booklet should prove very helpful to physicians generally, since it not only mentions products, but gives brief descriptions of therapeutic application and dosage. Physicians will profit by requesting copies of this booklet from Eli Lilly & Company, Indianapolis.

COUNCIL PASSED

The attention of our readers is called to the "Council Passed" announcement of The Abbott Laboratories, on another page. We bespeak for this advertiser the support and patronage of our readers. This firm is doing splendid research work, and the scientific products which it is developing include medicinal chemicals never before made in this country.

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Full particulars and prices may be obtained by addressing The Minnesota Sanitarium, 1926 Fifth Ave. S., Minneapolis.

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CHRONIC AND RELAPSING ARTHRITIS*

By J. P. SCHNEIDER, M. D.

Assistant Professor of Medicine, University of Minnesota Medical School
MINNEAPOLIS

For a period of five years I have had an unusual opportunity to observe and study the large arthritic material of our University Out-Patient Department, where, in the nature of the complaint, a large percentage of these unfortunates are seen. The impression I have to offer is, that, measured by end-results, we are not of any particular help to the average confirmed arthritic. Perhaps we are lagging behind in our knowledge of this rather rapidly developing field of medicine; or perhaps we are guilty of inco-ordination—of lack of team-work—notwithstanding our strife for just such effort in every kind of advance made in dispensary organization. If not guilty of lagging behind or of treating the patient dividually, instead of individually, then perhaps my pessimism may be ascribed to the fact that our service receives the neglected, the poorly treated, and the resistant, confirmed, late arthritic. This is, probably, in a large measure true. To be added to these factors is the circumstance that many of these patients come from surroundings so unfavorable as frequently to nullify the good of treatments. Poor hygiene, damp and cold, and improper food and clothing are only too frequently responsible factors, and they are practically beyond our control.

While this is true of my out-patient material, it is not true of my private patients; and yet my impression must stand, namely, we are not solving the problem of the chronic arthritic.

To clarify this hitherto hazy field, still be-

fogged by the humors of the rheumatic past, it would seem to me, as it doubtless seems to others, that certain fundamentals ought to receive renewed attention and proper emphasis.

In the first place it is axiomatic, I take it, that pathologic study in the living and dead is a necessary foundation for all safe and sane advancement of our knowledge of disease. Why then not give the joint in all its parts the serious and detailed study, gross and microscopic, accorded, for instance, to the heart or aorta? Why do incomplete autopsies? Why not determine and fix certain facts as facts, and throw overboard the hoary fancies and speculations so slavishly copied by author from author?

In the second place, why not strive at the next session of the Congress of Medicine for the adoption of a standardized nomenclature relative to joint diseases? Our present predicament is the result of trying to retain and revamp ancient terminology. Handicapped by this heritage, we have further complicated matters by trying to use names introduced for specific concepts as class names. Finally, we have especially addled the subject by our efforts to make clinical, anatomical, röntgenological, and etiological classifications coincide.

Armed with a sane joint speech and fortified by a clearer knowledge of joint anatomy and pathology there remains to my mind still another desirable development if we are to make progress of value to the arthritic patient; and that is embraced in the application to the problem of

*Presented before the Stearns-Benton County Medical Society, St. Cloud, January 15, 1920.

team-work of the most cordial and close kind. The average chronic arthritic case is many-sided in its aspects, and manifold in its relation to the men in the special fields of medicine, to-wit, the otologist, the nose and throat specialist, the gynecologist, the orthopedist, the dentist, the genito-urinary specialist, the serologist, the bacteriologist, the röntgenologist, etc. To gather together the data which any one or more of these specialists may have to offer in the case; to evaluate their worth; and to adjust their bearing on the central problem in hand, constitute by far the larger task, and, in the very nature of things, must be done by a generalist in contradistinction to a specialist. The clearing-house of medicine presided over by the internist must build a complete and bomb-proof concept out of these diversely gathered and variously fathered aspects if there is to be anything of value to the human machine under consideration; for, while a rational therapy may hope to be successful when founded on a well-rounded diagnosis, a positive Wassermann, a leucocytosis, or devitalized teeth are but isolated phenomena of no value whatever until assimilated or rejected by the clearing-house. Team-work, therefore, is of the greatest importance. In the practical application of such co-operative endeavors the order and sequence should be, it appears to me, somewhat as follows:

1. A complete and detailed history.
2. A comprehensive general physical examination.
3. Indicated Röntgen studies.
4. A complete laboratory report, giving general and special data.
5. Specialists' reports, covering certain fields, such as the nose and throat, sinuses, teeth, tonsils, genito-urinary tract, etc.,—preferably direct inspection reports.
6. An orthopedic report, covering innumerable aspects of bone lesions, statics, dynamics, etc.
7. (a) Summarizing and arranging facts.
(b) Development of implications and suggestions looking to a diagnosis.
(c) Diagnostic conclusions or beliefs.

In view of the impossibility at present of building up any etiological classification of joint diseases, it will be of material assistance to build, as nearly as we can, along lines of scientific clarity. The following may serve:

1. The gouty arthropathies.

2. The arthropathies of severe nervous disease.
3. The arthritides secondary to specific infections:
 - (a) Neisserian arthritis.
 - (b) Luetic arthritis.
 - (c) Tubercular arthritis.
 - (d) Post-pneumonic pneumococcic arthritis.
 - (e) Post-typhoid bacillus of Eberth arthritis.
 - (f) Meningococcic arthritis.
 - (g) Post-scarlatinal streptococcic arthritis.
4. The arthritis secondary to focal infection, due to micro-organisms often unknown. Such foci may be at one or more of following sites: (a) middle ear, (b) sinuses, (c) teeth, (d) tonsils, (e) nasopharyngeal or oropharyngeal lymphoid-tissue masses, (f) cervical glands, (g) mediastinal glands, (h) pericardium, (i) endocardium, (j) bronchial tree, (k) pleural cavities, (l) gall-bladder, (m) appendix, (n) perirectal region, (o) prostate, (p) pelvis of kidney, (q) kidney, (r) urethra, (s) fallopian tubes, (t) endometrium and cervix, (u) vagina and communicating glands, (v) any endothelial or epithelial surface and associated glands.
5. Generalized osteo-arthritis.
6. Primary progressive fibrous arthritis:
 - (a) Benign type.
 - (b) Jaccoud or malignant type.
7. Atrophic arthritis.
8. Special entities and modifications:
 - (a) Post-traumatic osteo-arthritis.
 - (b) Tubercular toxic arthritis.
 - (c) Hemophilic arthritis.
 - (d) Hypertrophic pulmonary osteo-arthritis.
 - (e) "Biliary" terminal phalanx arthritis.
 - (f) Villous arthritis of Goldthwaite.
 - (g) The chronic arthropathies of the spine:
 - (1) Hypertrophic osteo-arthritis.
 - (2) Chronic ankylosing arthropathy.
 - (h) Colloid-disturbance arthritis.
 - (i) Allergic arthralgias.

1. *The Gouty Arthropathies.*—In 1918, in association with Dr. James Northington, a study was undertaken by myself relative to the "Relation of uric acid in the blood to chronic arthritis and fibrositis." To quote from the resulting paper: "It is certainly true that few diagnoses of gout, either acute or chronic, are made in this country as compared with the number reported

in England. There is at least the possibility that no such great disparity actually exists, and it may be that the error lies in the cases of the disease overlooked by us. Such are the considerations which led us to undertake this study. Since beginning it we have come across a statement by Barker in line with this idea: 'It is conceivable that even degrees of uricemia insufficient to cause crystalline deposits in the joints may suffice to initiate the degenerative and hyperplastic lesions of hypertrophic osteo-arthritis. Careful studies of the purin metabolism are accordingly urgently indicated in this group of cases.' In this study we made twenty-four estimations of the blood uric acid in seventeen patients ill with various arthritic lesions. Tabulated data read as follows:

Four cases of gouty arthritis, the average blood uric acid was 4.11 mgm. per 100; 4 cases osteo-arthritis, the average blood uric acid was 2.6 mgm. per 100; 1 case atrophic arthritis, the average blood uric acid was 2 mgm. per 100; 2 cases fibrous arthritis, the average blood uric acid was 1.7 mgm. per 100; 3 cases acute rheumatic fever, the average blood uric acid was 1.2 mgm. per 100; 1 case Neisserian arthritis, the average blood uric acid was 1 mgm. per 100; 2 cases focal arthritis, the average blood uric acid was 1.4 mgm. per 100 c.c.

Needless to say, we were careful to exclude such cases as showed any evidence of kidney insufficiency; and all these values we obtained with the same Benedict modification of the Folin and Dennis technic in the fasting patient. While the series is not large the trend of values indicates rather sharply that osteo-arthritis, atrophic arthritis, and fibrous arthritis have no associated uric-acid retention. The average values in the osteo-arthritic group are on the borderline, but care must be exercised in excluding the rise in uric acid which obtains in the elderly patient whose metabolism is more catabolic than anabolic—and all of these four patients were elderly and in poor physical condition. It would be safe to say—and this impression I am able to fortify by the metabolic studies of twenty-two patients since the above series—that, clinically, gout is rarely missed by the observant clinician, and is not a common ailment in this country. There is a considerable possibility that a good deal of "gouty literature" from abroad is the result of a deplorable looseness in the use of the term "gout," much after the manner in which the term "rheumatism" is abused.

Clinically, gout is a matter of abrupt, sharp attacks, the locality affected presenting marked dusky redness, and being proverbially tender to touch; and there is present always in the confirmed gouty individual an enlarged fatty liver, and tophi are present, sooner or later. After several attacks in the neighborhood of a joint the x-ray picture not infrequently shows sharply defined punched-out areas of decalcification.

2. *The Arthropathies of Severe Nervous Disease.*—In both tabes dorsalis and syringomyelia there may develop the Charcot joint—usually monarticular, especially the knee or ankle—which, when first seen by the physician, presents astounding disintegration and bizarre enlargement *without pain*. Very few of these joints are missed in our out-patient clinic owing to the routine general examination which these patients receive; while, on the other hand, they come only too frequently from private physicians who have failed utterly to comprehend the situation. The Röntgen plate shows poor structural detail, owing to formless line dispersion.

3. *The Arthritides Secondary to Specific Infections.*—In the specific infections arthritides, as in no other type of joint lesion, is the emphasis to be placed upon a good history. Thanks to the widespread effect of the vivid teaching of the late John B. Murphy, we are well taught to expect metastatic joint pathology to be initiated, if at all, about the twenty-first day of a Neisserian urethritis. We recognize the predilection of the gonococcus for the knee especially. The attack not infrequently involves unusual localities, such as the mandibular and sternoclavicular joint. There is a striking tendency for the joint once attacked to remain involved to the end. Its severity is diverse, depending a great deal upon early proper local treatment of the joint by rest and extension, for there is apt to be early destruction of the joint lining and cartilage with consequent subluxation or ankylosis in severe cases. As a result of this destruction the x-ray plate will show an approximation of the bone surfaces, and a very severe decalcification and rarefaction of the bone itself. However, the wise röntgenologist, aside from suggesting the possibility of such form-relations being due to the gonococcus, will abstain from attempting to make an etiological diagnosis, for progressive atrophic arthritis gives at times the same picture. To establish the etiological type other important data must be sought, namely:

(a) Microscopic demonstration of intra-cellu-

lar Gram-negative diplococci in smears from cervix, urethra, etc.

(b) The result of the complement-deviation test.

(c) Presence of iritis, conjunctivitis, or synechia.

(d) Absence of other non-Neisserian, but possibly related, foci.

When such additional data affirm the Röntgen findings, and the history and clinical course accord with this concept, then it is proper to set up a diagnosis of specific arthritis, and expect, if the process is not too fulminating or the early local extension treatment is not too long delayed, that, with special measures directed to the focus, the patient's articulation will be restored to the status of a useful member.

In principle what has been stated relative to the Neisserian type applies to all the other varieties of known specific infectious arthritis. It cannot be too often repeated that the antecedent illness must be sought for in the history and its specific relationship appreciated. In elderly people pneumococcic arthritis is not at all uncommon following some weeks of convalescence from bronchopneumonia.

4. *The Arthritis Secondary to Focal Infection.*—While there is much evidence in this type in favor of the joint process being a metastatic infection, there is no single well-defined organism indicated as the etiological culprit. In general, the non-hemolytic or slightly hemolytic group of short-chain streptococci are often found and said to be capable under certain conditions of reproducing the lesion in animals. The colon bacillus is occasionally found guilty. Frequently there is no proof whatever that the organism isolated from a supposed focus is causative; therefore, only too frequently, we must content ourselves with the label of *undifferentiated infectious arthritis*.

Clinically, focal arthritis has certain earmarks, a knowledge of which is essential. In the first place it seldom stands as a simon-pure arthritis. There is a concomitant myositis, neuritis, bursitis, or synovitis; or there may be, at various time and period phases, a play from arthritis, frequently monarticular to a myositis in an entirely new field. There is evidence of infection locally. The joint is swollen, red, and painful, often exquisitely so, and there is increased local heat. A moderate leucocytosis is present during an exacerbation, and a temperature of 100 to 101 degrees F., with accompanying sweats. The

small joints of the hands and feet are a favorite seat. The process, however, appears to be distributed throughout the fibrous tissue layers, both proximal and distal to the immediate peri-articular zone. There is a very marked tendency to persist in one or more joint areas once involved. That, in spite of this tendency to local persistence, there is danger of confusing focal arthritis with acute rheumatic fever, an entity as definite and distinct as any of the infectious diseases, was taught us in a rather striking example of the focal type in the person of Mr. S.

CASE

Mr. S., aged 42, was seen on July 22, 1918, with a marked arthritis involving the right wrist, right middle finger, less of the left wrist, and the dorsum of the left hand. There is arthralgia of both shoulders. The right wrist and finger joints are markedly swollen, red, and extremely painful to pressure or passive movement. The soft boggy tissue involvement does not stop abruptly distally and proximally to the joint, but spreads in both directions much like cellulitis. The present attack began abruptly with a mild chill one week ago. The left wrist and hand began twenty-four hours ago with no tendency for abatement of the involvement of the right. There is a temperature of 101 degrees F.; pulse, 90; and the man looks sick. His past history is negative except that he had a somewhat similar attack lasting four weeks one year ago. Following this attack he had his tonsils removed.

Physical examination revealed the left antrum of Highmore filled with pus, culturally revealing micrococcus catarrhalis and streptococcus viridans. A number of teeth directly under this antrum revealed sufficient signs of pathology to warrant suspecting them of a causal relationship to the antrum infection. All the other findings being negative and the tonsils well removed, the teeth were extracted and the antrum rapidly drained. In a few weeks the arthritis and diffuse tissue inflammation subsided entirely, and at this date, eighteen months later, the patient has not had any further attacks, and his general health is excellent.

From the clinical course and the marked tendency to fixity of the joint lesions with their mono- or oligo-articular distribution, it is of course next necessary to differentiate the specific infectious types, especially the gonococcic. From the idiopathic progressive types, it is needless to say, a sharp separation must be held, for the many radical procedures perpetrated on supposed focal arthritis should really be done on genuine focal cases. In osteo-arthritis, progressive fibrous arthritis, and atrophic arthritis there lies no hope in the direction of tonsillectomy, dental extraction, prostatectomy, etc. The x-ray findings will help to differentiate the osteo-arthritic and the atrophic in the characteristic bony changes, which I have never observed in a definitely proven focal

type. The fibrous types are so definitely associated with the presence of newly formed fibrous bands and so multiple in their small joint involvements that a fairly early differentiation should be arrived at.

Having arrived at the final conclusion of focal arthritis, it is next in order to proceed from focus to focus—all known areas where an "itis" may take root and persist—and canvass them all, using every means at our hand and at our call, it being particularly necessary here to employ the specialist. With such data in hand, there remains the frequently perplexing problem of deciding where the major fault lies,—its area and extent, its activity, its recent origin, or its ancient residence; and, when, as often happens, there are head foci and abdominal foci, a decision as to the proper sequence of attack must be made. There remains even then the question as to how much re-infection to expect from joints already badly involved and very active, to say nothing of the problem as to how radical to be in the face of a very active streptococcic focus. Not infrequently, such a patient is precipitated into septicemia and death by a too large and wide interference or ablation.

It is in this connection that I would add the weight of my disapproval of the present rampant evil of wholesale tooth extraction. This abuse is so extensive that it would not surprise me to see legal measures instituted before long. The cause is to be sought in that ever ready faculty in man of seeking a short-cut to a much desired end. The Röntgen film has placed in the hands of medical men, dentists, and so-called commercial *x*-ray laboratories a quick and ready-made diagnosis. If the films, good, bad, or indifferent, show areas of rarefaction about the roots of the teeth, grave pathology is present. If the victim has had some sort of pain in the past or has it now, this pain, unless it be in the very pit of his stomach or is obviously due to a recently broken limb, is promptly described as rheumatism. Ergo! the teeth must all come out; and for convenience of the dentist, not the patient, often at one sitting. The ready-to-hand *x*-ray machine is evil number one. An insufficient knowledge of dental and alveolar pathology, and still less knowledge of general pathology on the part of the rank and file of dentists, is evil number two. That this is pressingly true is indicated by the recent practice at the University Medical School of placing dental students for a period in the University Hospital. The dental teacher is aware—quite aware—of the gap that needs bridging between

"most dentists," as some one has expressed it, "who are jewelers or metal workers; who fall down grievously in their duties regarding infection; who frequently discuss, but seldom practice, asepsis,"—between such men and the medically fully trained man whose adequate foundational work makes for biological reasoning as against mechanical. To my mind there is no hope of bridging the gap except we make dentistry a medical specialty, with all of the usual pre-specialty general medical training. To such of the dental profession as are willing and able to see beyond their mirror, and to the physician honestly trying to clarify the "tooth problem," it is not without point and purpose to draw their attention to such facts as the following:

1. Thanks to dental teaching of the past decade a large percentage of pulps of teeth were destroyed. Regardless of any known method of treatment and filling of this area as a result of the irritation in the treatment or from the escape of gases from decomposed tissue after the root is filled, pathologic changes take place in the root, the periodontal membrane, and the alveolar process. These radically treated teeth, sooner or later, will give Röntgen evidence of decreased density about the apex. That this change will occur in normal young healthy animals with the technic usually employed in humans, is apparently established by the researches of Talbot.* This being true, it follows that to conclude that such areas of decreased density are foci of active infection, is of course fallacious. To ascribe to such areas of rarefaction properties of active infection in the presence in the host of "symptoms of focal infection," as *interpreted by the dentist himself*, is also naturally seeing what you want to see,—a propensity not necessarily limited to the characters in fairyland.

2. Teeth are vital deciduous end-organs. This applies, biologically speaking, to the so-called permanent set. The time at which they are shed, measured in years, is subject to the same variation, in general, that governs the lasting period of men's arteries—both teeth and arteries are in the end dependent upon the quantity and quality of the local lymphoid and blood supply. Otherwise vigorous and healthy appearing men of forty years frequently astonish one at the age of their vessels—just so, while twenty-eight of our teeth are ordinarily retained into the sixth decade of life, one must not be astonished to find that in the strict sense they are lost as

*Histopathology of the Jaws and Apical Dental Tissue. Eugene S. Talbot. Dental Cosmos, September, 1919.

vital organs at forty. This fact is the explanation for the often accidental finding of Röntgen evidence of osteoclastic activity about untreated teeth in people who complain of no ill effects whatever and who, upon physical examination, reveal none of the so-called focal symptoms. These exfoliation phenomena are but lately being properly studied; and a generalized application of their differential value is to be hoped for.

3. Certain well-known changes occur in the gums, teeth and alveolar process in the following list of general constitutional diseases.

(a) Diabetes mellitus. Teeth early become carious, pyorrhea alveolaris is present in every untreated diabetic of over twelve months' standing, and so long as the diabetic state obtains no amount of local treatment and mouth hygiene will be of avail. I can substantiate this generally known fact by my observations of several hundred diabetics.

(b) In chronic nephritis, with nitrogen retention; increased blood uric acid, urea and creatinin, in other words chronic uremia—a dryness of the mouth with cracked bleeding gums, later staphylococcic invasion and an extremely foul type of Riggs' disease, supervenes.

(c) Generalized atherosclerosis. Ninety per cent of these patients show caries, pyorrhea, atrophy of the periodontal structures, exfoliation of teeth, and alveolar atrophy. To do wholesale extraction in these patients is apt to produce a fulminating and persisting stomatitis, owing to the poverty of the local blood supply. This I have seen in a number of instances. When to the faltering nutrition of these patients there is added the handicap of mastication difficulties it seems to me that such measures are little short of criminal.

(d) Pernicious anemia and other long severe anemias and leukemias are accompanied by dental necrosis and apical absorption with the usual stomatitis and even ulcerative processes. That the mouth condition in pernicious anemia is the origin and source of the noxa that is responsible for the disease is a rank conjecture.

(e) Scurvy gives rise, as is well known, to characteristic gum changes,—purple, soft bleeding tissue with loosened teeth and intense fetor. While the ubiquitous streptococcus has been repeatedly isolated from the deeper pockets of these necrotic areas, it remains for pseudoscientific research to acclaim the coccic origin of the local lesions.

(f) Locomotor ataxia is not uncommonly at-

tended by a painless falling out of teeth and resorption of the alveolar process, probably due to specific peripheral neuritis.

(g) Pregnancy. Pain in the territory of the teeth, caries, and gingivitis are so common as to be the daily problem of the general practitioner.

(h) Pulmonary tuberculosis. Owing to general devitalization, the gums and teeth fall rapid prey to the ordinary inhabitants of the mouth.

(i) Mercury, lead, phosphorous, arsenic, and aspirin, when introduced into the body over a considerable period of time, accumulate, and often as the first sign we find the telltale deposits at the gingival margin. Extremely far-reaching changes may occur here before other signs of injury are in evidence, teaching us again the necessity of keeping an open mind towards the probability of the toxins of constitutional diseases acting in a like manner.

(j) Finally, sight must not be lost of the fact that nutritional defects and constitutional states play a large rôle in early tooth pathology. Vitamine poverty and rickets in infancy have a far-reaching effect on the structure of the alveolar process and its placement and the resistance of the teeth. Defective dentine and enamel development is present in thyroid, thymus, and parathyroid disease. Congenital lues, infantile and tarda, produces such gross changes as are indicated by peg-teeth, Hutchinsonian teeth, and humpy molars.

3. There remains a third point to be considered. Allowing that "blind abscesses" or similar foci are responsible directly for subsidiary foci, which I am not prepared at this time to admit as proven, the time element, and the elements of the total square area of absorption surface, are to be given full consideration.

Chronology is the science and art of ascertaining when past events took place and arranging them according to dates. To write a good medical history is to be a good chronologist. No judgment relative to cause and effect is sound unless the time element is accurately gauged. To illustrate how badly a patient may be treated when the element of time is entirely misread and misjudged was illustrated by a patient seen privately during the past year.

For chronic headache of several years' standing, general debility, secondary anemia, and generalized neuralgic pains a female patient, aged 60 years, had her tonsils removed and all of her teeth extracted—and was promised real results. A good chronologist would have developed the

fact that at the age of 18 the patient had scarlet fever, followed by a half year of invalidism characterized by edema. A fair diagnostician would have discovered, on examining this woman at 60, a marked hypertension, and hypertrophy of the left ventricle, readily explained as resting upon a basic nephritis, whose chief urinary evidence was that of marked polyuria and nicturia with an inability of the kidney to concentrate above 1.012 specific gravity. It would scarcely have been necessary to determine that her blood urea was 48 and creatinin 5.6 mgm. per 100 c.c., in order to fix the fact that an advanced granular kidney was present. The barest basic knowledge of gross pathology would have taught in this case the fact that the present kidney lesion was a terminal and unalterable change wrought through decades, not days or weeks, of time; that the very best way to enhance the gravity of the lesion would be to undermine the nutrition of the patient, which was certainly accomplished by making her toothless at one sitting. Altogether too frequently do we forget that the diseases of the degenerative period of life are the heritage of the adolescent and adult periods, and, when active infection is at the root of the immediate problem in hand, that it is only too frequently entirely secondary and frequently terminal. For, while the pathologist has learned to draw no conclusions from the presence of streptococci in organ tissues a few hours after death, the physician has ever to be warned to keep his weather eye open for this ubiquitous terminal invader, and not misinterpret his presence. That this barometer of lowered tissue resistance does emphatically not mean focal infection is of course evident to all students of immunology.

Granting, again, that in a given instance there are a number of "blind abscesses," and granting that they would be bacteriologically indicted as the source of active streptococcic propagation, let it now be assumed that from this very source the wall of the gall-bladder is secondarily infected. Allow this to have occurred ten or fifteen years ago, for every clinician knows that the average clinical gall-bladder case has the gall-bladder infection from ten to thirty years before he is ordinarily ill enough to seek a doctor. Now, assume this patient to have a certain type of arthritis due to this same organism. What is the logical line of attack, granting that the arthritis is focal and in its incipency? Would it be of avail to remove the offending teeth, the pockets at their roots representing perhaps five or six

square centimeters of surface in the presence of a relatively much more recent seat in the gall-bladder wall representing fifteen to twenty times the square area of infected surface? And studies of operative material have shown that the depth of penetration and ramification of this type of cholecystitis is very extensive. The difficulty is, ordinarily, that, owing to the ease with which the teeth foci can be demonstrated and plausibly correlated with the arthritis, as against the difficulty with which an offending gall-bladder can be definitely indicted, the teeth are attacked and the major focus left behind.

How easy it is to blame the teeth when fashion rules our mind, was taught in several instructive instances of focal arthritis in our out-patient series where, while the Röntgen films gave mute evidence of periapical absorption, on which evidence the dental worker unhesitatingly extracted the teeth, further study of the cases developed the fact that pyelitis of the colon bacillus origin was present. Acute exacerbations of pyelitis were followed in a week by a reactivation of the arthritic lesions. These patients were all females.

5. Generalized osteo-arthritis is an insidious form of arthritis, arising after middle age, particularly common in the female. Especially the phalangeal and metacarpophalangeal joints, often of the thumb, are early the seat of a relatively painless nodular enlargement. There may be exacerbations, but not severe enough to bring the patient to a physician unless for cosmetic reasons, usually not before a number of years have elapsed. Involvement of the joints of the cervical vertebræ extremely early in the disease or of the temporomaxillary joint, is often very suggestive of the disease, and of use in early differential diagnosis. Not infrequently these patients are not seen until the large joints, especially of the hip and shoulder, become circumscribed and limited in excursion. By this time the small joints will have become abrupt and nodular in contour, leading to displacement of bones laterally in direction. This is in sharp contrast with the static changes in the fibrous type, where luxation and hyperextension are typical. Skiography reveals the characteristic osteoclastic and osteoblastic changes. To be acquainted with generalized osteo-arthritis is to prepare the patient for periods of exacerbations and remissions with the assurance that incapacitation may finally supervene, but will not necessarily be attended in any great measure by general bodily ill-health; for it is remarkable how healthy the patients frequently

are aside from their inartistic joints. Relative to etiology, we must confess that we are in the dark with a little glimmer of light from the field of endocrinology. Of course no rational man in his right mind would expect to modify this degenerative lesion by tooth extraction or tonsillectomy.

6. Primary progressive fibrous arthritis, which is a form so designated because the characteristic changes involve the formation of new fibrous-tissue bands. It occurs in two clinical types: (a) the benign form, and (c) the malignant or Jacoud form. The former begins, as a rule, insidiously in the young adult, especially the adolescent female, with involvement of the large joints and often symmetrically in the small joints of the hands and feet. Stiffness, loud cracking in the joints, and a minimum of pain are present. Exacerbations occur in the spring and fall. The small members, after a few years, are drawn into various positions of semiflexion or hyperextension. X-ray study fails to reveal any changes in bone or cartilage. As an infirmity this type is not inconsistent with a long and useful life. The malign form, on the contrary, is most likely to have a stormy onset very difficult to differentiate from acute inflammatory rheumatism, and once established is frequently so deforming in its course as severely to incapacitate the poor victim, to say nothing of the deleterious effect upon his general health produced by the repeated exacerbations attended by fever and prostration. The joint once attacked never clears up again. Each successive attack tends to condense the periarticular swelling more and more until rather distinct bands of retracting fibrous tissue form, producing deflection of the fingers to the ulnar side, flexion of the proximal phalanges with forced extension of the terminal and mid-phalanges. In time not only voluntary but passive replacement of these members is lost. Contrary to osteo-arthritis the thumb is not involved in the malposition owing to the absence of slips of the palmar aponeurosis. At the onset great pains must be taken to differentiate acute rheumatic fever. Endocarditis is not found to complicate fibrous arthritis, nor will the salicylates relieve the pain. Before the disease has become generalized and distinctive it is well to take every precaution to differentiate Neisserian arthritis where contractures may also occur with the resulting displacements. However, the x-ray evidence of bone-rarefaction found in the gonococcic type is never present in this type. The

best hope lies in a mistaken diagnosis. The clinical course and local changes are imitated by the specific types, especially Neisserian and luetic.

7. Atrophic arthritis is most common in young women of asthenic habits in whose history a persistent gastro-intestinal derangement is the rule. During exacerbations there are a low-grade pyrexia, quickened pulse, and rapid emaciation. It is polyarticular, beginning in the small joints, but having the characteristic tendency of fixity. Later the larger joints participate. The skin over the joint is waxy-white or bluish-white; the contour of the swelling smooth and spindle-shaped in the earlier stages. Later shrinkage from atrophy of the periarticular structures occurs. Muscular spasm and wasting with contractures are now present, but new fibrous tissue is not in the picture. Associated skin changes, such as pigmentation, vasomotor phenomena, and glossy skin, are common. Skiagraphic studies show absorption of the cartilage and an abnormal translucency of the bones, often the entire shaft giving this picture. Late telescoping of the phalanges is common. The outlook in this type so commonly affecting young, ill-nourished females earning their own livelihood, is not entirely gloomy if the underlying gastro-intestinal disturbance can be corrected. I have seen several such patients markedly improve under treatment directed to this end, and have seen at no time the slightest help secured from attention to chronic head foci.

8. Under the heading of special entities and modifications a word is necessary about the modifications the above standard types may assume under the influence of trauma and of static and other special agents.

(a) Post-traumatic osteo-arthritis belongs to the province of the orthopedist. That it is common, particularly following a shoulder or hip injury, is to be borne in mind. It is of course monarticular, and after the lapse of some time the presence of exostoses in the x-ray picture is significant.

(b) Tubercular toxic arthritis, a curious subvariety of arthritis, and rather poorly known among medical men in general, has nothing to do with (1) primary tuberculous arthritis, which is oligo-arthritic, and may or may not develop into the well-known fungous arthritis, or with (2) secondary tuberculous arthritis in patients with active visceral tuberculosis; but is of the nature of an allergic phenomenon. It occurs in its characteristic form during the course of the absorp-

tion of a tuberculous pleural exudate. There is a polyarticular involvement with swelling, redness, and increased local heat, all of which may come on very suddenly and as quickly disappear after a week or ten days. Unless one is familiar with this rather harmless joint-reaction there may be a good deal of concern.

(c) Hemophilic arthritis is prone to occur in the hemophilic male child. There is a history or the presence of other bleeding phenomena. While it may be polyarticular in distribution, classically it affects the knees. Sudden enlargement of the joint ensues often following slight trauma, with tenderness, pain on movement, distinct fluctuation, but no redness. After a first attack the joint may become normal, but there is a strong tendency to recur with secondary organic changes frequently greatly altering the contour and strength of the joint. Not to miss this type is to bear in mind that it exists.

(d) Hypertrophic pulmonary osteo-arthritis has a similarity to tuberculous toxic arthritis in that the condition is commonly associated with chronic tuberculous lung abscess, and in that it is toxic, not infectious in origin. That such is the case is apparent when we note the diversity of underlying conditions giving rise to this rather easily recognized malady. After tuberculosis, usually of the large solitary cavity type, come bronchiectasis, empyema, neoplasm, congenital heart disease, and lues in order of frequency as the underlying cause. While symmetrical involvement of the skeleton is the rule, the most striking changes are noted in the more distal parts, especially of course the clubbing of toes and fingers. The soft parts are thickened, but the Röntgen findings are characteristic in a well-developed case in the form of diaphyseal periostitic thickening.

(e) "Biliary" terminal phalanx arthritis is a subvariety well known to French clinicians, characterized by a gradual enlargement of the terminal phalanges of the fingers, very slowly developing and very indolent. The patient will give direct or indirect evidence of an underlying chronic cholecystitis. X-ray pictures demonstrate the entire absence of bony involvement. Whether the process is a subinfection from the gall-bladder or, again, as in the previous type, a toxic product, is difficult to decide. Not infrequently a knowledge of this type will suggest a thorough examination, tending to the discovery of a gall-bladder lesion, which, as is so frequently

the case, has not yet arrived at a period in its life-history when localizing signs are present.

(f) While the large field of static arthritic condition belongs to the province of the orthopedist, chronic villous arthritis of Goldthwaite needs especial mention, in that it is exceedingly common and must, therefore, be considered in different diagnosis. The knee is the chief seat. Etiologically to be considered are trauma; double flat-foot, knock-knee, adiposity, especially suddenly acquired; recent pregnancy, faulty postural attitude, and, of collateral influence, the presence of varicose veins. Subjectively there are stiffness, periodic effusion, especially after an attack of pseudolocking, and a sense of unreliability. Objectively, a soft silken crepitus is felt as one alternately flexes and extends the limb. The x-ray gives often a picture of articular incongruity. The hip-joint is often a frequent seat of this static disorder and after years the x-ray picture may show lipping.

(g) While the bones and joints of the spine are subject to disease in precisely the way the other joints of the body are, there are two main processes affecting the vertebral column as a whole, namely:

1. Hypertrophic osteo-arthritis.
2. Chronic ankylosing arthropathy.

In hypertrophic osteo-arthritis the process begins in the intervertebral discs with the formation of marked exostoses on the bodies of the vertebræ and especially lipping of the vertebral bodies at their edges. The small joints of the lateral processes never ankylose. It, therefore, does not cause rigidity, but does cause limitation of range of motion, dependent upon the extent and size of the exostoses. It usually occurs after the age of 40. Of interest is the report of a recent case in the literature in association with tumor of the sella turcica and acromegaly. The author believes that the two conditions have the same etiology, namely, a dyscrasia glandulæ.

Chronic ankylosing arthropathy of the spine is more common than the foregoing, and is characterized by early ankylosis of the small joints of the articular processes, and the costo-vertebral articulations are often early involved. The ligaments appear even to ossify. A rounded kyphosis is characteristic. To differentiate from osteo-arthritis there is the early ankylosis, often preceding for a year or two demonstrable x-ray changes (just the reverse in osteo-arthritis), the inhibition of costal breathing, and its occurrence in individuals under 40. In the type beginning

below and extending upward there is often concomitant involvement of the hip and shoulder joints.

(h) In conditions of disturbed body chemistry, particularly in states of reduced alkalinity of the blood, such as are met with in the diabetic, the nephritic, and the atherosclerotic, there is not infrequently seen an associated mild but exacerbating peri-articular type of arthritis. This is also true in the female advanced gastro-enteropathic. Some of these manifestations are irregular enough to puzzle one exceedingly as to just how to classify them. Bone changes are never present, and they are seldom so severe as the true atrophic type. It is in this type of case that we may well need to consider the factor, new in medicine, but pregnant with possibilities, of biocolloid disturbance. Each tissue has a normal turgor, or state of swelling, which is greatly influenced by acids, alkalies and salts. Fibrin is so sensitive that it swells in the presence of traces of acid quite undetected by ordinary indicators, such as litmus—in fact fibrin itself is a most sensitive indicator. Bearing in mind the nature of the tissue elements entering

into the structures about a joint, we can readily perceive that a diminished alkalinity of the blood and tissue fluids could precipitate early and marked periarticular swelling with consequent compression of the normal local alkaline bloodstream, entailing syneresis of local colloid containing structures.

(i) Allergic arthralgias and mild arthritides are important, both in association with the introduction of foreign protein, as in serum therapy where it may occur with or without the skin, gastro-intestinal, or lung symptoms, and with spontaneous allergic states, such as are our daily problem in asthma, urticaria and hay fever. To see such a sensitized patient pass from the asthmatic picture into giant urticaria, thence into a state of incessant vomiting only to stop abruptly and develop a mild generalized arthritic picture, is to be reminded of the close and intimate relationship of the joint surfaces to the serous, mucous, and skin surfaces of the body as a whole, and it incidentally teaches us again that not all joint manifestations are necessarily of infectious origin.

POST-OPERATIVE TREATMENT IN GALL-BLADDER, STOMACH, INTESTINAL, AND PELVIC CONDITIONS

By GILBERT KVITRUD, M. D.

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The ways and means of carrying out post-operative treatment are many. The surgeon usually leaves the patient in the hands of someone else, who is supposed to get the patient on his feet in due course of time. In a large hospital the internes are responsible for the after-treatment. The Senior on the service hands on to his Junior the necessary information as to the care of the different patients, and this interne, when he becomes a senior, passes information to his assistant. This plan is rather hard on the patient. I remember that when I was an interne I had information passed on to me by the others who had already been on the service. On the other hand, the general practitioner who has been out in practice for five or ten years without following up operative technic, is not competent to care for patients who have been operated on; a man who has had an internship and who gets his hand into operations afterwards, is much better equipped to look after the treatment.

Before a patient is wounded by an operation, he should have a good physical examination. Even though there is a surgical condition present we must ask whether there is any other condition present which might modify the operative technic or the after-treatment and convalescence. What is the mental attitude of the patient? Is he interested enough in his case to answer the questions intelligently, and does he volunteer information or is he indifferent? A careful examination may bring to light complications which can be managed much better in the pre-operative than in the post-operative stage. When one runs up against something abnormal after operation it is worth a good deal to know whether that condition was present when the patient came to the hospital. Going over a case in this manner speaks for a better diagnosis and shorter convalescence.

Before leaving the operating-table the stomach may be irrigated to wash out the mucus,

saliva, and ether swallowed. The warm moist skin is wiped dry, and rubbed with alcohol to close the pores. Then the patient is wrapped in dry clothes and blankets, and transferred as rapidly as possible to a warm bed, without exposure. Hot-water bottles are placed about the patient, which are wrapped and of such temperature that the patient will not be burned. The head is placed at one side with no pillow, and the foot of the bed may be elevated a little. Note whether the skin is moist and warm. If moist and clammy, look for a shock or hemorrhage.

A nurse should watch the patient so that he does not swallow his tongue, choke from mucus or vomitus, or remove the dressings. This nurse should be able to pull out the tongue and clear the mouth of mucus and vomitus when indicated. The position of the patient, lying on one side with no pillow and with the foot of the bed elevated, causes the tongue to fall to one side instead of into the pharynx, and offers free drainage for mucus and vomited matter.

If the patient vomits after regaining consciousness, give a glass or two of hot water, which will act as a lavage. As long as he is going to vomit, one might as well give the stomach something to expel. If it keeps up after six or ten hours, wash out the stomach with hot water containing sodium bicarbonate, and repeat every four or six hours, if necessary, filling and emptying two or three times at each performance, and then leave a little of the alkaline solution. Sometimes this has not the desired effect, and champagne must be resorted to or the essence of peppermint, tr. capsicum, ice-cap, hot applications, or a mustard plaster over the epigastrium, morphine, 0.1 gr. cocaine half hourly, cerium oxalate, or 1 min. of chloroform in water; but no drugs should be used until the stomach has been well irrigated. Lying on the right side may ease the desire to vomit, and sometimes the removal of a drainage-tube has a good effect.

The patient having fully recovered from the anesthetic, what position should he assume in bed? The best possible posture is the one which gives comfort and ease, providing it is not contra-indicated. One should try everything in this line that will do away with opiates.

It has been thought that the patient should lie flat on his back in spite of severe aches and pains. There are very few occasions where this is necessary, and many find no difficulty in sleeping if they can rest on one side. Retention of urine is apt to occur in the supine position, and

when this occurs the patient should be turned over, face downward or on the side, to aid in voiding. The sitting or semisitting posture should be used for elderly people because of danger of hypostatic pneumonia, and also after thoracic, gastric, gall-bladder, and appendix operations because the abdominal organs are compressed by the diaphragm and other muscles. This keeps down distension by gas and also gives the heart and lungs more room in which to work, allowing freer respiration and better vascular tone. Another reason for the sitting posture is, that abdominal infection is kept away from the diaphragm, which is an important detail because it has been shown that septic material is absorbed very fast into the lymphatics of the diaphragm, but very slowly by way of the pelvis. Dr. R. C. Coffey, of Portland, Oregon, has shown that the body must be elevated 45-50 degrees to be sure of drainage of the lumbar depressions of the abdomen. This is the reason for its use in general peritonitis. The upright position also reduces the chance for bed sores, relieves pressure on bony projections, and prevents dizziness when the patient begins to walk or to sit in a chair.

Thirst after operation is due to the reflex checking of the secretion of saliva by the ether or chloroform, or the handling of the viscera, and is also caused by morphine and atropine, purge before operation, vomiting, sweating, and hemorrhage. Small sips of water may increase vomiting, and it is, therefore, much better to give large drinks of hot water, because then all or some of it is absorbed, and, if the patient does vomit, the stomach is assisted in ridding itself of irritants. Cold water or ice-water increases thirst by causing congestion of the mucous membrane. If the water tastes too flat, use hot tea, raisin tea, champagne, or lemon juice and water. If it is desired not to give water by mouth, let the patient chew gum, or suck the end of a wet towel. Proctoclysis is the best way of supplying fluid to the body when the patient needs it in thirst, shock, hemorrhage, infection, peritonitis, pernicious vomiting, etc. The solution used consists of water incorporating one or more of the following: salt, bicarbonate of soda, simple sugar, calcium chloride, potassium chlorate. In case the fluid must be gotten into circulation as soon as possible, hypodermoclysis of normal saline is used, the needles being inserted into the breasts or abdominal wall or thighs. In extreme cases, the saline solution is introduced into a vein.

Post-operative shock may be the result of the

anesthetic or trauma and exposure of tissues, nerves and organs. It appears to be less after operations on pelvic organs and greater in operations on the stomach and duodenum. Pain is important in causing and prolonging shock. There are many reasons advanced for the cause of it, but whatever the cause we know that we have to deal with a lowered blood-pressure, rapid pulse, stagnation of the blood in the veins, and lessened force to the heart-beat. What should be done in the way of prophylaxis? The following:

1. The patient should not be purged to death the night before the operation.
2. Should not be starved.
3. Should be in a quiet frame of mind with a good night's sleep.
4. Should be well wrapped and covered while on the table, so that the body is insulated from the cold metal or glass by blankets and not by sheets.
5. The loss of blood should be reduced to a minimum.
6. Exposed coils of intestine should be covered with hot saline pads, and should not handle them more than necessary.

When the condition of shock has occurred, the first consideration is the fall in blood-pressure. All kinds of drugs are used to raise the pressure, such as camphor in oil, atropine, ether, digitalis, alcohol, saline infusion, strychnine, etc. Each one of these is all right to bolster up the heart, but the heart is not at fault. The trouble is that the blood does not flow toward the heart, but stays out in the peripheral circulation, and, consequently, the heart has no blood to work on,—just like a pump without any water.

The drug which gives results is epinephrin. It is best given hypodermatically, but may also be added to the proctoclysis solution. The dose ranges from 5 to 15 minims of a 1:1000 solution, given every one to two hours. The dose must not be too large nor continued for too long a time because the increased blood-pressure may cause dilatation of a weak myocardium. Caffein causes vasoconstriction lasting about one and a half hours, and is supposed to act better on a diseased heart than on a normal one. Give in three-grain doses and repeat in two to four hours. It has been shown that blood can be forced toward the vital part of the body by bandaging the lower limbs, or raising the foot of the bed and thereby give the heart the necessary volume of blood. If there has been a hemor-

rhage, salt solution must also be injected to increase the volume. Proctoclysis can also be used, and epinephrin added to it.

Pain may be caused by packings or drains, awkward position, tight bandage or adhesive plaster, safety-pin passed through a fold of the skin, gastro-intestinal gas, sharp or short ends of sutures, tight sutures, and wound-infection. Rest and sleep are essential to good recovery, and causes of pain or discomfort should be sought for and removed. One of the common causes is gas. The first thing to do is to give a laxative enema, or molasses and milk enema, and repeat if necessary. Sometimes a small dose of pituitrin, while the enema is retained, aids in expelling gas. However, in pelvic cases great caution should be exercised in their employment too soon after operation. In fact several days should elapse before resorting to an enema and then only sparingly. Turpentine stupes can be used if the wound does not interfere. The sitting posture should be encouraged as prophylaxis. Turpentine and essence of peppermint or loaf sugar may be used by mouth. As a rule, hypodermics of morphine must be used for other pains if the cause cannot be removed. Morphine can be used in two ways. One way is to give small doses every three or four hours for the first twenty-four or forty-eight hours. The other is to give a single dose when indicated. If hypodermics are given only as necessary, the dose must be large enough to do the work; if too small it has to be repeated once or twice, and by that time the patient has had more trouble than he cares about and probably has lost a good night's rest. Use one-quarter to one-half grain and without atropine, for atropine increases the thirst.

Drainage-tubes and packs may have to be loosened, bandages cut, and sutures removed in order to stop pain. If infection of a wound is the cause, open at the proper place, and apply wet dressings.

Diet depends upon the operation. If the stomach has been cut into, no food should be given by mouth the first three or four days. Nutrient enemas may be given if any liquids are necessary. In a case like this it is much better to starve than to run chances of vomiting and distension by gas. After appendectomies the patient should starve the first twenty-four hours or at least till the nausea and vomiting have disappeared. Then one can give albumin water, raisin tea, buttermilk, peptonized milk, beef juice,

and broths. Whole milk is apt to cause gas, and the casein may irritate the stomach. As for the broths, they have about the same chemical composition as urine, and are used for the psychic effect, providing the kidneys are normal. The object is to give those foods which will not be a burden to that particular tract which is supposed to be at rest.

As the stomach and intestines regain their normal tone, other foods are gradually added; and by the time the patient is able to sit in a chair, a full diet is being given. Good nourishment is necessary to heal the wounds and furnish energy in sepsis and fevers. Feeding should not be forced when food is not well borne or when the patient is indifferent. The nurse should study her charge, find out what foods he likes, and, when appetite begins to flag, resort to iron, quinine and strychnia, tr. nux vomica, beer, malt, etc., if the change in diet has not the desired effect. The patient's likes and dislikes should receive some attention because he has inside information. The tray should be served by the patient's nurse at the same time each day, should be neat, the food either hot or cold, never lukewarm, concentrated, and small in quantity; and the remains should be removed as soon as the patient is through. The noise and odors of the kitchen should never be allowed to reach the wards. I have walked into some hospitals where the food odor was easily identified above the smell of medicines and disinfectants.

There are times when the surgeon runs up against a case in which prolonged illness or disappointment has broken the patient's spirit. It taxes one's ability to start the patient on the right road. This starting should not be delayed too long. Another doctor in consultation may help or the use of psychotherapy, electrotherapy, hydrotherapy, *x*-rays, and massage may be of value. Tonics may be indicated, and, along with a proper suggestion, will give the patient a feeling of well-being. A low blood-pressure may keep one down, and measures should be taken to raise it to normal. Make sure the patient is getting enough to eat of the food he likes, and

see to it that the channels of elimination are kept open. Then, again, there are those that have been patients in hospitals before, who like to keep the nurses and doctors on the jump, complain of little aches and pains to sympathizing friends and relatives, sleep during the day, and raise the roof at night. These have to be sat on pretty hard sometimes to make them behave.

Massage is useful in aiding the circulation of the blood, increasing the function of the skin, toning up muscle tissue, and stimulating the nervous system.

The direct current has a nutritional effect on nerve tissue, and is, therefore, used to increase nerve-nutrition, while the induced and sinusoidal current is used for muscle-stimulation.

After operating for malignant disease, *x*-ray or radium treatments should be given as soon as possible.

Psychotherapy and hydrotherapy are beneficial in ridding some patients of minor conditions which are preventing a complete recovery.

In summary, I wish to repeat:

1. The after-treatment should be in the hands who follows up operative technic.
2. All surgical patients should have a good examination before reaching the operating-room.
3. Patients should not be starved and physicked to death before operation.
4. In persistent vomiting, the stomach should be washed out several times before drugs are resorted to.
5. Encourage the sitting or semisitting posture if not contra-indicated.
6. Give large drinks of hot water during the first twenty-four to forty-eight hours, instead of sips of iced water.
7. Do not use heart-stimulants in shock.
8. Look around for causes of pain, and remove them if possible.
9. When morphine is used for pain, use a large enough dose the first time, or else use small doses repeated often, and do not combine with atropine if the patient is thirsty.
10. Call a consultant when the patient is not convalescing as expected.

BLOOD ANALYSIS IN DIAGNOSIS AND PROGNOSIS*

IGNATIUS J. MURPHY, B.S., M.D.

MINNEAPOLIS

The purpose of this paper is to discuss the practical application of some of the latest procedures used in blood analysis. I will also demonstrate one method. It will be seen that the total nitrogen, the urea nitrogen, the creatinine, the uric acid, and the sugar can be accurately determined from a single small sample of blood in a very short time.

THE INDICATIONS FOR A CHEMICAL ANALYSIS

A brief review of some of the more important chemical constituents of the blood under both physiological and pathological conditions seems in order. Of prime moment are the non-protein nitrogenous bodies. Expressed in milligrams per 100 c.c. of blood, Hawk gives the following as normal: Total non-protein nitrogen, 25-30; consisting of urea, 12-15; uric acid, 2-3; creatin, 3-7; creatinine, 1-2, and ill-defined substances in small amounts. Under pathological conditions much higher non-protein findings are common; e. g., total non-protein nitrogen, 350 milligrams; urea nitrogen, 300 milligrams; uric acid, 30 milligrams; creatin, 30 milligrams, and creatinine, 35 milligrams.

One other substance not of a nitrogenous nature is as important as either of the four nitrogenous bodies—sugar.

Of consequence, yet of less moment, are cholesterol, sodium chloride and alkali reserve.

Chemical analyses, although not necessarily a part of the routine in a physical examination, should be done more often. Some of the chief indications are the following: patients showing albumin or sugar in the urine; pre-operative prostate cases; pre-operative kidney cases; unconscious patients; cardiovascular cases; cases where gout is suspected; patients with furunculosis or acne and a few other skin lesions.

Blood analyses have shown us that many of the patients that have been treated for diabetes, when depending upon the urinary findings alone, were in reality nephritics and not diabetics at all. These patients may void urine loaded with sugar; but when a blood analysis is made, it shows the sugar of the blood normal, but non-protein nitrogens high. In true diabetes the blood sugar is always higher than normal. The normal is given by Hawk as 100 milligrams per

100 c.c. of blood. In health the urine contains about half the degree of sugar concentration as the blood; but no sugar is found in the routine urine analysis because of the crude yet practical methods employed. Although it is possible in the case of the majority of diabetics to demonstrate sugar in the urine by means of the routine test, many real diabetics will show a high blood sugar concentration in spite of normal urine findings. Many of the patients who show only a small amount of sugar in the urine prove to be nephritic; on the other hand, nephritis of the parenchymatous type may show both sugar in the urine and a large blood sugar content. Here, as in the other cases of nephritis, an estimation of the non-protein nitrogen will clear up the diagnosis.

The cholesterol of the blood is high in diabetes, nephritis, pregnancy, cases with gall-stones, and arteriosclerosis. In diabetes the cholesterol estimation gives more information than the fat determination does. Cholesterol is normally diminished in anemia. Here feeding of cholesterol in olive oil has a scientific basis, and clinicians have reported some cases showing marked improvement after treatment with cholesterol.

ANALYSIS INFLUENCES CHOICE OF ANESTHETIC

An anesthetic is not well borne if the non-protein nitrogen of the blood is high. Patients showing an increase of 100 per cent over normal of either urea nitrogen or creatinine always die following an operation. In all cases where the urea nitrogen, the creatinine or the sugar is above normal, the CO₂ combining power should be estimated before administering an anesthetic. When an anesthetic is imperative, gas is first choice and ether second. It should be borne in mind that a partial anesthesia will produce a condition of acidosis.

DIAGNOSTIC AND PROGNOSTIC HINTS

In order to correctly value the blood findings it is necessary to bear in mind how they may be influenced by the diet. With cases under treatment, in order to make an intelligent prognosis, it is also necessary to estimate the phenolsulphonephthalein output in the urine.

Normally, only 20 per cent of the urea of the blood is the result of metabolism within the body; the other 80 per cent results from the pro-

*Presented before the Hennepin County Medical Society, February 11, 1920.

tein ingested. In other words, about 20 per cent of the urea nitrogen is endogenous, and 80 per cent exogenous. Obviously, with protein restrictions of the diet, the amount of urea nitrogen of the blood can be greatly changed.

The uric acid of the blood, likewise, arises both from ingested protein and as a result of metabolism within the body. Normally, 50 per cent is endogenous and 50 per cent exogenous. Consequently, protein restriction will influence the uric-acid content of the blood, but not to the degree it will the urea nitrogen.

In the case of creatinine, on the other hand, 90-100 per cent is the result of metabolism within the body. Protein restriction in the diet changes the creatinine findings in the blood little or not at all.

In all cases of nephritis it seems that the best index to prognosis is the degree of creatinine change under treatment. Prostatic obstruction, however, produces a condition where the creatinine may be normal, but here the urea nitrogen is always high. For the prostate case, the improvement in the phenolsulphonephthalein output seems to offer the most reliable datum on which to base a prognosis. In acute nephritis, the creatinine of the blood may be normal; here, too, the phenolsulphonephthalein test will indicate the degree of temporary change.

It is well known that a lesion of one kidney usually produces more or less sympathetic involvement of the other. In these cases the determination of the urea nitrogen and creatinine of the blood offers a better index to the true condition than does the phenolsulphonephthalein out-

put. In all cases the total nitrogen of the urine is of less importance than that of the blood, because it is impossible to estimate delays in the absorption and excretion of ingested proteins.

Phenolsulphonephthalein is, at present, our most reliable test for kidney function. It shows the function at the moment applied, while the blood test is a measure of the accumulating differences between the amounts of waste nitrogen produced and the amounts eliminated.

In cases of diabetes the most important index to prognosis is the glucose tolerance curve. When making this test, instead of giving a fixed amount of sugar, it is better to give 1.75 grams per kilogram of body weight. If this examination is inadvisable, a study of the diastatic activity gives data of much prognostic value. If the diastatic activity remains high in spite of treatment indications for a return to regular diet and activity are not good.

The analytical procedure which I will now endeavor to demonstrate is the one taught by Folin of Harvard. (Slides shown.)

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THE
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FEBRUARY 15, 1920

THE JOURNAL-LANCET MADE THE OFFICIAL ORGAN OF THE HENNEPIN COUNTY MEDICAL SOCIETY

At a meeting of the Hennepin County Medical Society on Monday night, February 2, a resolution for the adoption of THE JOURNAL-LANCET as the official organ of the Society came up for discussion and was adopted. Following is the resolution:

RESOLVED, That THE JOURNAL-LANCET be made the official organ of the Hennepin County Medical Society, all papers read before the Society to be its property, and are to be published in THE JOURNAL-LANCET as the official organ unless the writers otherwise prefer to publish their papers elsewhere.

THE CONTINUED EPIDEMIC

In the last number of THE JOURNAL-LANCET reference was made to the new epidemic, and it was thought at that time that the epidemic might not be a very serious problem, but in the past two weeks the number of cases of so-called influenza, la grippe, or simple colds, has increased in a very decided degree. The number of deaths from influenzal pneumonia has increased materially, but not uniformly, and the number of people who are sick has increased beyond any figures shown in the statistics of the Health Department.

Dr. F. E. Harrington, of the U. S. P. H. S., the present commissioner of public health in Minneapolis, has endeavored in every way to

check the progress of the epidemic and has been successful in many instances; and yet the physicians are probably not reporting all the cases that come under their observation. Then, too, Dr. Harrington believes there is a great deal of carelessness on the part of the people in that they do not stay at home long enough to recover from the disease which they carry, nor do they protect themselves from exposure. It has always been a mystery to both the medical and lay mind why women's present mode of dressing is tolerated by womankind. The man is fairly well clothed; the woman is fairly unclothed. On the street one sees women in high-heeled shoes crashing through slush, snow, and mud without rubbers, while men who are well dressed wear overshoes or rubbers, or otherwise protect their feet from cold and dampness. Whether the disease is carried by the exhalations of the patient or is air-borne, the people should protect themselves better than they do.

There has been as yet no order sent out from the Health Department for the closing of theaters, churches, or schools; and it is likely that all of these places will remain open, provided that those who are sick stay away from crowded places, and those who are well remain at home for fear of exposure, or at least, if they are obliged to be out, they conduct themselves as if an epidemic were present and protect themselves so far as possible from undue exposure.

Considering the population of the two cities, Minneapolis and St. Paul, the number of cases is not extremely great, but when the newspapers say there are from 1,500 to 2,000 cases it means that probably in both cities there are several times this number. This includes, of course, all transient colds, all moderate cases of la grippe, and all cases of influenza of whatever type.

The Commissioner of Health believes that the duration of the disease is forty-eight hours or somewhat longer, and he has accepted the definition of epidemic influenza as an infectious disease of unknown etiology characterized by sudden onset, marked prostration, and definite constitutional symptoms, and there is always a fever at some stage of the disease. Nervous, gastrointestinal, or respiratory disturbances occur either as entities or in some combination or sequence. This makes it possible for the physicians to declare that influenza is present in anyone who has any of these symptoms for forty-eight hours or longer. But somehow the majority of these cases improve sometimes within

twenty-four hours, or within two or three days, and the patients are back at their work. These rapid recoveries are sometimes misleading, as shown by the epidemic of the winter of 1918-1919.

We have just begun to receive literature suggesting the use of vaccines, mainly as a preventive measure; and some go so far as to suggest that the vaccine is a therapeutic aid. The probabilities are that we shall have the same after-effects, either in lungs, heart, or the nervous system, as we had last year, and it is up to the medical profession to advise and prepare the people for these complications.

A MERE GUESS OR A SCIENTIFIC PREDICTION?

The ever-present problem before the scientific medical investigator or observer is the differentiation between a mere coincidence and an effect produced by a cause. It may be hazardous to guess what per cent of the phenomena studied by medical investigators fall under the former head and what under the latter. A hint at the bigness of the former percentage is found in the tendency toward drug nihilism, which is most marked in our medical schools, in many of which pharmaceutical teaching is well-nigh abandoned.

A recent and specific illustration of the latter point is found in the absence of antitoxines in the present epidemic, in contrast with their almost general advocacy last year. An equally pertinent and forcible illustration is seen in the remedies, proposed and administered, for influenza last year, scarcely one of which could be scientifically demonstrated to have a particle of effect upon the disease, while the coincidence of getting well on the part of the patients "proved" all such remedies perfectly efficacious.

The above "reminiscences" are suggested by a document just received from the Bureau of Census at Washington, which suggests the caption of this editorial,—*"A Mere Guess or Scientific Prediction?"* Obviously, if it were the former, it was a conclusion from coincidence, which we suspect it was.

As the communication suggests a line along which observation may well be directed, we give it herewith:

INFLUENZA PREDICTION FULFILLED

In the November 8 issue of the *London Lancet* appeared a prediction by Dr. John Brownlee, D. Sc.,

based on a careful study of past influenza epidemics, that a recurrence of the 1918 influenza epidemic would occur in January or February, 1920.

Doctor Brownlee found that influenza epidemics recurred at intervals of 33 weeks, providing the thirty-third week did not fall between June and December, in which the recurrence would be expected at the end of 66 weeks or 99 weeks, and therefore he regards the fall epidemic of 1918 as an exception to the rule. In the United States we are now having a recurrence after 66 weeks.

It is now exactly 66 weeks since the mortality peak of the 1918 epidemic in Chicago. The same is true for New York City and Washington. In all three of these places influenza is now epidemic.

The periodicity suggests that we may be dealing with infecting organisms, which not only have power to reproduce themselves in a virulent form continuously for a long period if susceptible persons are exposed, but which also have the power of developing in cycles of 33 or 66 weeks.

The recurrence might be explained on the hypothesis that immunity has lasted 66 weeks, though this hypothesis does not explain the fact already noticed in some families that those attacked in 1918 are now immune, while those not attacked in 1918 are now contracting the disease. The more reasonable explanation seems to be that the present epidemic is due to a definite cyclical regrowth of the infecting organisms from the seed of the former epidemic.

Definite cycles of development are common in the known vegetable and animal world; some plants flower annually, some biennially; the malarial organism may complete its cycle in two or more days; the locust requires in some cases seventeen years.

Similarly the organism responsible for our recent pandemic may complete its cycle in 33 weeks or perhaps 66 weeks. This recurrence of the epidemic after 66 weeks certainly strengthens the view that the epidemics of 1889, 1890, 1918, and 1920 all have a common etiology.

FEWER SURGICAL OPERATIONS DURING THE INFLUENZA EPIDEMIC

The Executive Committee of the Minnesota State Board of Health last week adopted the following resolution, which was endorsed by the Hennepin County Medical Society at its last meeting:

"RESOLVED: As a result of last year's experience the State Board of Health recommends most strongly that all surgical operations (except emergency operations), whenever it is possible, be postponed while the influenza epidemic is prevalent, knowing that the danger to the patient following etherization is, not infrequently, to bring about influenzal pneumonia. Also it is necessary to conserve hospital space because of the probable influx of operations for empyema and mastoiditis due to influenzal infection.

"It also recommends centralization of nursing for these epidemic cases, and that visitors to the hospitals are to be excluded to the greatest extent possible and permitted to visit patients only when the hospital authorities give consent."

This matter was brought up in *THE JOURNAL-LANCET* some months ago, when the ground was taken that only emergency operations should be permitted during an epidemic of this kind; and last year the surgeons were very loyal, and operated as little as possible. This year they will undoubtedly be of the same mind.

All of the hospitals are suffering from a shortage of beds and a shortage of nurses; consequently every effort must be made to support the hospitals in their endeavor to prevent further spread of the epidemic.

FOCAL INFECTIONS

The attention of our readers is called to an article in the present issue by Dr. J. P. Schneider on "Chronic and Relapsing Arthritis," which deals with various infections that lead to chronic and acute diseases. The paper is very clear in its efforts to bring about a simplification of joint disease nomenclature, and also discusses the teamwork necessary between the various specialists in medicine, as well as between physicians and dentists, in dealing with focal infections.

Dr. Schneider cites cases illustrating his various points and explains why certain diseases are prevalent in the presence of certain infections. One of his suggestive points is a discussion of the wholesale tooth-extraction problem. This subject, of course, has been presented from many points of view, and it is not strange that for a time the dentist was ready, with the advice of the physician, to clear out almost every man's mouth. But the number of cases not benefited by radical tooth treatment is sufficient occasionally to disprove the dental and alveolar pathology; that frequently cases are treated by the dental surgeon and no results obtained. This is not necessarily the fault of the dentist, for he may have overlooked, as we all do, some point of infection which has much more to do with the diseased condition than has a bad tooth. There evidently will be a good deal of controversy over Dr. Schneider's views as associated with dental teaching, but such controversy is always beneficial to both sides. Of course, the pendulum may swing too far to the conservative side of the problem, as it has swung too far to the radical side.

The author also gives a list of diseases which might bring about the changes in the gums, the teeth, and the alveolar processes. The investigator who is not extremely careful is apt to look at the tooth side first as the cause of disease,

while some other investigator would look at the disease side first, before the teeth were extracted. There is no question but that one may see an occasional case in which complete elimination of the teeth is of great value, and many of our old people who in early life neglected their teeth and who, before they reached too grave a stage, had them all extracted, have worn plates for many years, forty or fifty even, and lived to a ripe old age. Of course, all such cases are perhaps not strictly in line with the "focal-disease" subject, but they show in a measure how individuals are more or less exempt from infective processes. The editor recalls two cases in which nervous and mental conditions predominated in people who were evidently careless about their teeth. In each case all the teeth were extracted, and recovery was complete; and the beginning of the recovery was evident a few days after the extraction.

Dr. Schneider also emphasizes the importance of very careful general examination of the individual, and a very careful study as to what the line of treatment should be.

This paper is commended to our readers as a text for reference, and everyone should study it carefully and consider its problems and conclusions as coming from one who speaks with authority.

HOSPITAL STANDARDIZATION RUMORS

As probably all of our readers know, the American College of Surgeons is now engaged, and has been engaged for a year or more, in a survey of the hospitals of the United States and Canada with a view to their standardization. The survey of all hospitals with a capacity of 100 beds or more was completed some time ago, and the report was printed for distribution. Copies of this report seem to have been freely distributed, even after it was decided not to publish it until the survey of all hospitals shall have been completed.

Because of the fact that all kinds of rumors as to hospitals of the former class (hospitals of 100 or more beds) are in circulation, some of which tend to do harm, we shall assume the responsibility of making known the facts as they pertain to hospitals in our own field.

The purpose of the survey is to classify the hospitals which maintain a sufficient degree of effective operation to justify their classification

as "standardized hospitals." It is the belief of the College that all hospitals will adopt this standard, and soon be entitled to the rank of standardized hospitals, when, if thought wise, the standard can be raised.

On the part of most hospitals failure to reach the minimum of efficiency set by the College does not necessarily mean inferior work in such hospitals, but it does mean that certain safeguards, especially on behalf of the public, have not been adopted, just as a State that fails to qualify its health service for admission to the registration area of the United States, does not protect its own people. The hospitals that have been classified in the survey already made by the American College of Surgeons are justly entitled to credit for their work.

The preliminary list of hospitals of 100 or more beds in the states in which THE JOURNAL-LANCET mainly circulates is as follows:

In *Minnesota*—St. Luke's and St. Mary's Hospitals, of Duluth; St. Mary's, of Rochester; Mounds Park Sanatorium, of St. Paul; the University, the City, and the Eitel Hospitals, of Minneapolis.

In *North Dakota*—The Bismarck Evangelical Hospital, of Bismarck.

In *Montana*—Murray Hospital, of Butte.

"THE ALARMING LOCAL HOSPITAL CONDITION"

We published on another page a letter from G. W. Olsen, President of the Minneapolis Hospital Council, on the hospital situation in Minneapolis, which he calls "The Alarming Local Hospital Condition." We publish this letter of a local character because we believe the statements made in the letter locally apply to the conditions in every city, large or small, in the Northwest; and we further believe these conditions will not be relieved until the rich and the well-to-do men of these cities begin to meet these needs by generous benefactions.

The medical profession has a duty to perform toward the public in educating the leaders of public sentiment to provide larger hospital facilities in all cities, and ample facilities in cities and villages now without hospitals. It is well for the courageous physician of exceptional business training to build his private hospital, but the man who can make such a hospital pay is rarely found, and he is poorly thanked for his large service if he charges enough to make the hospital self-sustaining. The public or public

benefactors found in successful business men must support most of our hospitals.

Why should not medical men keep these facts before the public until they comprehend the necessity and meet it by donations or public taxation?

Truly, the "local" hospital condition is alarming everywhere.

A NEW WAY OF COLLECTING BILLS

The *Journal of the American Medical Association* has adopted a new method of bill collecting with the idea of saving postage, both direct and return. At the end of the subscription period, the subscriber receives in his paper a printed slip telling him that his subscription has expired and asking for his renewal either by check or any other form of remittance. This is a supreme test, when one stops to consider it, and puts the honor of the medical man in a conspicuous place, and it is up to him to send in his subscription promptly in order that he may retain his *Journal*. The *Journal* has reached a large circulation, and it is quite an undertaking to send out bills to a large number of subscribers, particularly when it is fairly well known that sometimes doctors are a little slow in their remittances, and will pay no attention to a small bill. However, the physicians of the present day are on a better business basis, and most of them have adopted business methods that bring business returns, consequently they are better able to send their remittances in promptly, thus showing their loyalty to the American Medical Association and to themselves and their profession.

A CLINICAL ISSUE

THE JOURNAL-LANCET has received a letter from a Minnesota physician who had written to the editor of the *Journal of the American Medical Association*, suggesting that it would be a wise plan for the *Journal* to get out an occasional clinical number, thinking that this would be of great interest to a large proportion of the members of the Association. This is undoubtedly true, and no doubt the number would be warmly welcomed; yet our correspondent claims that his suggestion fell upon deaf ears, and his letter was not answered. When one considers the enormous volume of work and business that the office of the *Journal of the American Medical Association* has to attend to, it is easy to understand why it is that letters are not always promptly answered. Doubtless the *Journal* receives letters from all

over the country, some of them suggestive and helpful and, perhaps, many of them immaterial, but in our experiences the office force of the *Journal* have always been prompt in their replies. Perhaps someone considers it unnecessary to write an acknowledgment of the receipt of every letter that comes into the office. If this Minnesota physician is at all uncertain about the *Journal of the American Medical Association* adopting his suggestion, he may turn to Minneapolis Clinic Week, where he will not only get the benefit of individual clinics by many men, but will have a concise and condensed report of the clinical material that has been presented to him in a publication of the clinics in THE JOURNAL-LANCET.

The above, by the way, suggests that the Annual Minneapolis Clinic Week comes in the month of April, and already the machinery is at work for the campaign of information. If one has any practical experience in collecting a large number of clinical reports from a considerable number of men, he will at once realize the difficulties that surround the publication of clinical matter collected from many men, even though it were presented but once or twice in twelve months.

CORRESPONDENCE

THE ALARMING LOCAL HOSPITAL SITUATION TO THE EDITOR:

Any family that has had occasion this winter to call upon any of our local hospitals for service must be impressed with the fact that there is a great scarcity of hospital accommodations in this city. This condition has existed for several years, but has grown steadily more acute until at the present time it constitutes a serious menace to the public and private health and well-being of our population.

There is an immediate need of a thousand additional hospital beds in Minneapolis. Reports received from local general hospitals within the last ten days show that every hospital is filled to overflowing, extra beds being placed in sun-parlors, recreation-rooms, and corridors; and yet, in the aggregate, at least fifty patients are turned away each day for lack of room. Statements of physicians indicate that there are hundreds of sick persons being cared for as best they can be in their homes, in rooming-houses, and in hotels, who ought to be in hospitals, where they would receive the care of trained nurses and constant attention of resident physicians. Most pathetic are the conditions surrounding maternity cases in the pitifully small apartments. In many of these cases only expert hospital service can safeguard the lives of mother and child. Yet when the obstetrician pleads for admission of his case, he must be refused because there is not a hospital bed vacant nor is there an empty space in which to place a bed.

It is certain that lives are sacrificed because of the utter insufficiency of our hospital accommodations.

This situation, while alarming, is not due to any abnormal conditions respecting the health of the community. It is but the natural result of the growth of our city. The percentage of sickness is doubtless smaller than when our hospitals were built and considered ample, but the population is very much greater. A fairly safe proportion of hospital accommodations is one bed to each hundred of population. Minneapolis has 2,400 hospital beds, including the University Hospital, which is only partly local in its service. With a population of 400,000 we should have 4,000 hospital beds in order even reasonably to provide for our local needs. Then, in addition, there is the great territory commercially tributary to Minneapolis. For this Minneapolis is, or should be, the medical center, as well. We are in danger of losing that position because of the inadequacy of our hospital facilities.

"Why don't you hospitals build when you know how badly it is needed?" cries the applicant who is turned away, in indignation and despair. "Why, in heaven's name, don't you provide room for our patients?" echo the doctors, who in so many cases find their best efforts thwarted by the lack of hospital care and laboratory aids.

These questions seem to imply that the responsibility lies with the trustees or the governing boards of our hospitals. But does it? Practically every one of our hospitals is carrying a heavy burden of debt. These debts are the result of past building operations. Most of our hospitals have started with nothing more than a small plot of ground. The buildings have been raised on mortgages and trustees' notes. In ordinary times the revenues of the hospital would cover the operating expenses and leave a small surplus with which the mortgage could be gradually paid off. When one mortgage was paid, an additional building would be needed and a new mortgage would be taken on. In the last five years no hospital mortgages have been paid off; for, let it be known, among Minneapolis hospitals there are no profiteers. Hospital rates in Minneapolis have been increased on the average of 30 per cent since 1914. It is well known that the average cost of all food supplies has increased 90 per cent, that surgical cotton, gauze, antiseptics, and other drugs and medicines have increased from 100 to 300 per cent, that linens and bedding have increased 200 per cent, and that wages of hospital employees have been raised 75 per cent. If our hospitals were operating on a commercial basis they would be amply justified in doubling the rates charged in 1914. But physical disability is a misfortune, and let it be said to the honor of Minneapolis hospital boards that they have steadfastly declined to profit by anybody's misfortune. By the strictest economy, our hospitals have been able to pay current expenses by the moderate increases made in their charges, but they have not been able to pay off capital indebtedness nor to provide amortization funds for future construction loans.

In the judgment of the writer the practice prevailing heretofore of requiring the sick to pay for hospital buildings and equipment, as well as for operation and maintenance, is radically wrong. It would be just as

reasonable to require only those who suffer fire losses to build our fire stations, supply equipment, and maintain the fire department, or only those who are held up, beaten, and robbed to maintain our police department. Hospitals are life-saving stations of the most vital importance to the community. Persons who are well today and perhaps never gave thought to the existence of a hospital may be clamoring for its services tomorrow. Sickness or accident may overtake anyone, and in either case the hospital becomes indispensable. Why, then, should not the people of the community as a whole build and equip the hospitals? Hospitals exist for the safety of life and health in the community. Everyone who possesses life and health owes it to himself to help provide these safeguards and keep them strong and adequate.

But there are those who say, "I don't need the hospital; when I am ill I remain in my good home and call a trained nurse." Many would thus smugly absolve themselves from any obligation to the hospital. They do not stop to consider that every nurse worthy of the name received her training in a hospital; that nearly 2,000 nurses have graduated from Minneapolis hospitals since nursing schools were instituted, and that at this date 900 young women are receiving instruction in Minneapolis hospitals in the vital science of nursing the sick. And how many are there who realize that practically the entire cost of training these nurses is paid by those who pay hospital bills? Yet the community as a whole benefits by the presence among us of trained nurses, and complains only because there are no more of them. It is safe to say that neither the Government nor the people of the United States can ever fully appreciate or adequately compensate the service of the hospitals of the country in furnishing the thousands of nurses needed for war service, reconstruction, and public-health work. These trained women went forth at the Nation's call ready for immediate duty without the expenditure of a dollar of Government funds upon their further training. And they were the best trained nurses in the world. Surely, the public owes something to the institutions that provided this training and struggled hard to find the means to pay for it.

Returning to the question of the inadequacy of local hospital accommodations; it is imperative that something be done before next winter. Hospital boards must bestir themselves, devise plans for new construction, and go frankly to the people and demand the necessary funds. A thousand additional beds will cost approximately \$3,500,000. If we cannot provide a thousand, let us make it at least five hundred this year, and see if that will not give us some relief. A fund of two million dollars should be subscribed by the people of Minneapolis, collected in four installments, covering a period of two years, and apportioned among the hospitals conducted by charitable organizations in this city according to their respective needs and room for expansion. Building operations could be started without delay, temporarily financed by the respective hospital boards' individual credit. Minneapolis has many needs, but none which should give her citizens greater concern at this time than the need of enlarged hospital facilities.

G. W. OLSON,

President, Minneapolis Hospital Council.

Minneapolis, January 28, 1920.

NOTE.—Comment on this communication is made in our editorial columns.—THE EDITOR.

BOOK NOTICES

SURGERY AND DISEASES OF THE MOUTH AND JAWS: A PRACTICAL TREATISE ON THE SURGERY AND DISEASES OF THE MOUTH AND ALLIED STRUCTURES. By Vilray Papin Blair, A.M., M.D., F.A.C.S. Professor of Oral Surgery in the Washington University Dental School and Associate in Surgery in the Washington University Medical School. Third edition. Revised. 460 illus. St. Louis: C. V. Mosby Company, 1917

Blair's "Surgery and Diseases of the Mouth, Face, and Jaws" is one of the best text-books ever produced for the guidance of dental students in the field of dental surgery. Doctor Blair has had an enviable reputation in this field for many years, having been Professor of Surgery in the Washington University Dental School, and Associate Professor in the Washington University Medical School.

His treatment of gun-shot wounds and injuries is the best in print at the present time. His splendid work in France during the World War in the field of oral surgery has particularly fitted him for the revision of this book, which, without his war experiences, was, to my mind, the best of its kind that has been published. With the advantage of the experience gained in war surgery, it becomes incomparably the best thing of its kind extant, and deserves, and will receive, wide reading and great use in the many dental colleges of the country. It might well be added to the books required in our medical schools also, for Blair's knowledge of general surgery is the foundation which has enabled him to succeed in the specialty of mouth and facial surgery.

—THOMAS B. HARTZELL, D.M.D., M.D.

RECONSTRUCTION THERAPY. By William Rush Dunton, Jr., M.D. Assistant physician at Sheppard and Enoch Pratt Hospital, Towson, Maryland; Instructor in Psychiatry at the Johns Hopkins University; President of the National Society and of the Maryland Society for the Promotion of Occupational Therapy; Secretary of the Maryland Psychiatric Society. Illustrated. Philadelphia and London: W. B. Saunders Company, 1919.

The credo on the fly leaf gives an idea of the reasons for publication of this 225-page book:

"That occupation is as necessary to life as food and drink; that every human being should have both physical and mental occupation; that all should have occupations which they enjoy, or hobbies. These are the more necessary when the vocation is dull or distasteful. Every individual should have at least two hobbies,—one outdoor and one indoor. A greater number will create wider interests, a broader intelligence. That sick minds, sick bodies, sick souls, may be healed through occupation."

There are chapters on "What Occupation Is"; "Qualifications and Duties of an Occupation Director"; "Financial Considerations"; "Training Courses and Amusements"; "Workshops"; "Occupational Therapy and the War"; "Prosthetic Appliances"; "Physical Education"; "Occupations for the Feeble-minded"; "Occupational Therapy for the Blind"; "Occupational Therapy and Social Service"; and a very valuable bibliography of occupational therapy. The problems of why one

man prefers carpentry and another man some other activity are considered, and the need for arousing interest is dealt with. The belief that occupation is good for all forms of mental disease, excepting delirium and acute excitement, is advanced, and encouragement given to the idea that outdoor occupations have a most definite value.

The book is of value, not only to the occupational director, but to the general practitioner and to the therapist, as exercises and forms of occupation and amusement are suggestively treated, and prosthetic appliances well dealt with.

—S. MARX WHITE, M.D.

TALKS ON OBSTETRICS. By Rae Thornton LaVake, Instructor in Obstetrics and Gynecology, University of Minnesota; Obstetrician in Charge of the Out-Patient Obstetric Department of the University of Minnesota, etc., etc.; One Time Assistant Resident Obstetrician to the Sloan Hospital for Women in New York, Price, \$1.00. St. Louis: C. V. Mosby Company, 1917.

Note.—This book was reviewed in our columns some time ago, but from a medical point of view. It is now re-reviewed from a dental point of view by a dentist.—THE EDITOR.

Of the recent new books that of LaVake's under the caption "Talk on Obstetrics," we have one of the most helpful of the year. His discussion of sepsis in relation to pregnancy is particularly timely, and I believe LaVake is one of the first, if not the first, to draw attention to the relationship of toxemia of dental origin to pregnancy. The book is particularly valuable to medical and dental students in that it furnishes a logical and careful analysis in a very readable form of the problems of pregnancy.

Prenatal care receives splendid treatment. On page forty-nine he says, "To me the removal of all obvious foci of infection means prophylaxis against sepsis, toxemia, miscarriage, and accidental hemorrhage." He insists on the clearing of infection from the oral cavity to relieve the kidneys of much unnecessary strain, and he gives explicit directions, which, if followed by the physician, cannot but help to carry the patient through this delicate period successfully.

The author is not at all narrow nor dogmatic, and the research work which he has done on the question of abortion as related to bacterial infection makes his observation on the relation of dental infection of great value. In discussing this question he says, "Of all other causes, observation has taught me to give most weight to infection. I am inclined to believe that it is the most important of all causes." He also lays great stress upon diseased dental organs and the eradication of septic pyorrheas and abscessed teeth. He is distinctly of the opinion that foci of infection in the mouth or elsewhere had better be removed whenever recognized, that the danger of inducing miscarriage is slight as compared to the danger of abortion or hemorrhage from the presence of eradicable infections, and he insists on the removal of diseased teeth by the most painless method, stating that pregnant women stand major operations well and that abortion is likely to ensue only when infection takes place.

The impression gained by the author of this review in the reading of this book is, that it should be placed in the hands of the every-day practitioner and in the hands of all medical and dental students because it places on a

scientific basis the relationship of infection to pregnancy and because it sweeps away the old fallacies maintained by so many practitioners that eradication of diseased areas tends to induce miscarriage, whereas the reverse is the case.

—THOMAS B. HARTZELL, D.M.D., M.D.

NEWS ITEMS

Dr. J. A. Kittleson has moved from Starbuck to St. Paul.

Dr. W. F. Espie was elected mayor of Virginia last week.

Dr. O. H. Urstad has disposed of his practice at Kiester to Dr. A. J. G. Henderson.

Dr. R. H. Wald, formerly of Hastings, has been elected a member of the staff of St. Luke's Hospital of St. Paul.

Dr. A. H. Dunlop resigned as health officer of Crookston last month, and was succeeded by Dr. A. A. Just, of Crookston.

Dr. T. M. MacLachlan, of Bismarck, N. D., has resumed practice, having been in army service for the past two years.

Dr. Walter Weimers, of Cass Lake, is assisting in the medical work of the Mudcura Sanitarium at Shakopee for a few months.

We give in an editorial on another page names of the "standardized hospitals" of 100 or more beds in this territory. The list is both small and interesting.

Dr. Parker L. Berge, of Brainerd, died last month at the age of 32. Dr. Berge was a graduate of the University of Minnesota Medical School, class of '13.

Dr. A. A. Meyer, of Osakis, succeeds Dr. H. W. Goehrs in the firm of Drs. Hilbert and Goehrs of Melrose. Dr. Goehrs, as already announced in these columns, will locate in St. Cloud.

Dr. C. M. Robilliard, of Faribault, has been appointed by Dr. Bracken to represent the U. S. Public Health Service at that point, and will have in charge the treatment of discharged soldiers and sailors.

Dr. DeWitt C. Jones, of St. Paul, a former coroner of Ramsey County, is outspoken in the public press as an advocate of the use of liquor in pneumonia, and especially with patients who have been drinkers.

Dr. J. A. Rutledge, superintendent of the Modern Woodmen's Tuberculosis Sanatorium at Colorado Springs, Colo., died ten days ago. He

was well known to many of our readers because of his work among the Modern Woodmen.

The staff of the Minneapolis City Hospital gave the new superintendent, Dr. W. E. List, a complimentary dinner at the Minneapolis Club on the 9th inst. Further notice of the event will appear in our next issue.

The Chicago Ophthalmological Society gave a complimentary dinner last month at the LaSalle to Dr. Casey A. Wood upon his retirement from practice. Among the ten or twelve invited guests from other cities was Dr. H. McI. Morton, of Minneapolis.

The Grand Forks (N.D.) District Medical Society held its annual meeting last month at Grand Forks, when the following officers were elected for 1920: President, Dr. G. J. Gislason; vice-president, Dr. H. G. Woutat; treasurer, Dr. H. W. F. Law; secretary, Dr. A. C. Dean.

Dr. E. H. Marcum, of Bemidji, has been commissioned major in the Medical Reserve Corps. Dr. Marcum and his new associate, Dr. R. J. McAdory, have moved into new and commodious offices in a building erected for them.

Dr. A. D. Hawkins, of St. Paul, has become associated with Dr. W. C. Kaufman, of Appleton. Dr. Hawkins will specialize in eye, ear, nose, and throat work. He is a graduate of the University of Minnesota Medical School.

Dr. Harvey G. Hieber, of Thief River Falls, died last month at Monrovia, Calif., where he had gone for treatment for tuberculosis. Dr. Hieber was 41 years of age at his death. He was a graduate of the Northwestern Medical School, of Chicago, class of '03.

Dr. F. M. Poindexter, of Dillon, Mont., who served in the British Medical and the American Medical Corps, has been appointed major in the U. S. Army Reserve Medical Corps, this rank being given to him for his efficient work in war service.

Dr. R. Edwin Morris, of the Medical School of the University of Minnesota, has been appointed by the American Medical Association to investigate the standardization of Minnesota grown digitalis, which is believed to be superior to digitalis grown in any other part of the world.

The Northwestern District Medical Society of North Dakota met at Minot in January for its annual business meeting. Officers were elected as follows: President, Dr. Andrew Carr, Minot; vice-president, Dr. S. M. Johns, Velva; secretary-treasurer, Dr. P. A. Nestos, Minot. The

meeting concluded with a social function consisting of dancing, cards, and refreshments, the wives of the doctors and the local dentists participating. The meeting was a decided success and worth while.

New and improved plans for the Sioux Falls Clinic will increase the cost of the building, now under way, to \$150,000. The physicians and surgeons comprising the Clinic are Drs. R. G. and G. A. Stevens, E. L. Perkins, E. E. Gage, G. E. Van Demark, N. J. Nessa, T. J. Billion, and M. A. Stern.

Dr. R. C. Main, a Rush graduate, succeeds Dr. L. W. Allard, as county and city health officer of Billings, Mont. Dr. Allard resigned to resume private practice. Dr. Main was health officer of Marquette, Mich., and had served in this capacity three years when the Billings appointment was made.

The Tri-County Medical Society of North Dakota held its annual meeting at Carrington last month, when officers for 1920 were elected as follows: President, Dr. Charles MacLachlan, New Rockford; vice-president, Dr. D. W. Matthaël, Fessenden; secretary and treasurer, Dr. H. Van de Erve, Carrington.

Dr. G. S. Adams, of Yankton, S. D., has been appointed superintendent of the State Hospital for Insane, succeeding the late Superintendent L. C. Mead. Dr. Adams has been connected with the hospital as assistant physician for a number of years, and is thoroughly in sympathy with Dr. Mead's policy, which will not be materially changed.

Dr. M. G. Milan has been appointed full-time physician of the Tri-County Tuberculosis Sanatorium at Thief River Falls. He has been giving only three days a week to the work. The capacity of the sanatorium is twenty-five patients, and last month it had twenty-four. Dr. O. F. Melby was re-elected president at the annual meeting of the Board of Directors last month.

The following physicians were licensed to practice in North Dakota last month, having passed the examination of the State Board at the January meeting: Dr. George M. Constans, Donnybrook; Dr. Carl T. Olson, Lidgerwood; Dr. Roy C. Little, Mayville; Dr. Frederick W. Fergusson, Starkweather; Dr. Alfred G. Long, University; Dr. Arthur H. Orcutt, Kenmare; Dr. Ralph M. Erwin, Mandan; Dr. Magnus B. Ruud, Grand Forks; Dr. John H. Moore, Grand Forks; Dr. Clarence W. Robertson, Park River; Dr.

Harry J. Fortin, Fargo; Dr. Ernest W. Hancock, Carpio, and Dr. Francis J. Scully, Bottineau.

Dr. J. A. Hielscher, of Mankato, was the first physician in Minnesota to tender his services to the Public Health Service to respond to emergency calls in case of urgent need. He was the first physician to be called, and went to Vernon Center last month at a moment's notice to curtail the influenza epidemic at that point. His army service stood him in good stead, and made his work at Vernon Center immediately effective.

The Woman's Auxiliary of the Hennepin County Medical Society is doing admirable work, confining their efforts mainly to Hopewell Hospital, the tuberculosis department of the City Hospital. The following officers were elected at the society's annual meeting last month: President, Mrs. E. Z. Wanous; first vice-president, Mrs. S. M. White; second vice-president, Mrs. J. Frank Corbett; treasurer, Mrs. F. C. Rodda; recording secretary, Mrs. W. B. Roberts; corresponding secretary, Mrs. Daniel MacDonald; federation secretary, Mrs. G. E. Benson; auditor, Mrs. G. Deziel. We give this list of names to suggest a source of information to any women interested in forming or conducting like auxiliary societies.

FUR COAT FOR SALE

Man's unplucked seal coat, otter collar and cuffs. Size, 54 inch chest, 53 inches long. Coat and lining in good condition. Will sell for half cost of new coat. Address P. O. Box 364, Faribault, Minn.

PHYSICIAN WANTED

Dickey, N. D., is in need of a good physician, and the location is a good one. The population of the village is 250, with a surrounding territory of twenty miles, including a number of small towns. Full information can be obtained of Earl Scea, Village Clerk, Dickey, N. D.

PHYSICIAN WANTED

Selfridge, N. D., offers a fine opening to a good physician. The field is a large one, and the entire territory is in a prosperous condition. With a stock of drugs, a physician in this field will do well from the start. For full information, address C. Ellingson, secretary the Community Club, Selfridge, N. D.

PRACTICE FOR SALE AT NOMINAL PRICE

A physician who wants to go to Florida will transfer his practice in a very prosperous field in North Dakota in a county-seat of 800 population. City has a \$40,000 high school building, opera house, six churches, three banks, electric lights, and water-works. Steam-heated office rents for \$15 a month. Eest of references given by retiring physician. For particulars, address 118, care of this office.

SUBSTITUTE PHYSICIAN WANTED FOR ONE YEAR

A young physician is wanted to take a doctor's practice in South Dakota for one year. State experience, from what school graduated, and salary wanted. Address 308, care of this office.

DENTIST WANTED

To share a modern well-located office with a physician on a busy corner in best residence district of Minneapolis. Rent, very reasonable. Location, corner of Hennepin Ave. and 31st St. Tel. Kenwood 7065, or address 117, care of this office.

PHYSICIAN WANTED

Kensington, a growing village in Douglass County, Minn., needs a physician, Scandinavian preferred. Territory is large and very rich, all collections practically 100 per cent. For any information desired, address E. T. Bjorklund, Kensington, Minn.

PHYSICIAN WANTED

A doctor is wanted in a good live town in one of the richest sections of Brown County, S. D. Farmers are all well-to-do; the nearest competition is 20 miles on the north, east, and west, and 12 miles on the south. The village drug store can be bought if wanted. For any information desired, address B. T. Dott, Stratford, S. D.

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For sale cheap on account of purchase of larger outfit, a 12-inch Scheidel-Western coil, a controller, a mercury interrupter with two interchangeable mercury pots, two Tungsten target tubes. All in good working order for fluoroscopic work. Address or call upon Dr. F. W. Wittich, 1035 Metropolitan Building, Minneapolis.

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By a young woman of 23 who has been in a drug-store for a year and a half doing the prescription work and assisting a surgeon in his minor surgery in his office and hospital. Has a good education and can keep books and do typewriting, but not short-hand dictation. Will give the best of references. Permanent work wanted. Address 310, care of this office.

OPENING WANTED

A physician with excellent experience in general and emergency surgery, also general medicine, desires an opening in one of Minnesota's larger cities. Aged 39; married; best of references as to character and ability. Will consider contract or hospital work; partnership; association or good location. A reasonable investment will be made. Address 309, care of this office.

AN EXCELLENT OPENING

Tioga, N. D., needs a physician and offers a splendid field. The physician, who is leaving on account of poor health, did a business averaging \$700 to \$900 a month. The village has a population of 450, and the whole county is prosperous, and collections almost 100 per cent. Village has good schools, churches, and electric lights. Tioga is one of the best towns of its size in the state. For information, address the State Bank or the Commercial Club, Tioga, N. D.



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- 3 Scheidel Western Induction Coils 110 V. D. C.
- 1 Vulcan High Frequency X-Ray Coil 110 V. A. C.
- 1 American High Frequency X Ray Coil 110 V. A. C.
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- 1 Scheidel Western Coolidge Transformer and Regulator 110 V. A. C.
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REMOVAL OF SUPERFLUOUS HAIR, ETC.

One rarely sees a woman's face disfigured with superfluous hairs without a desire to tell her how they can be effectually removed, and no one can do this delicate thing so well as a physician. If a physician knows that such disfigurement can be effectually and inexpensively removed, it is difficult to understand why he should not want to impart the information to everyone of his patients so affected.

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Miss Ella Louise Keller, of Chicago, recently established a branch of her business in Minneapolis, at 447-8 Loeb Arcade, and her work has proved to be entirely satisfactory to physicians who have her cases. Her business is wholly removed from every form of quackery or misrepresentation, and is worthy the full recognition of physicians.

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Dr. Jeremiah Metzger, the Medical Director, has long been engaged in the work, and is a well-known authority on the subject. Dr. E. W. Hayes, his new associate, is a graduate of the famous Trudeau.

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Before the war Dr. Wm. K. McLaughlin was doing a large and very successful business in his Hygeia Hospital in Chicago treating narcotism and alcoholism. When this country entered the war, his physicians and nurses disappeared almost over night, and compelled the institution to close up.

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His treatment is that outlined in the *Journal of the American Medical Association* by Dr. Alexander Lambert, now president of the Association, in 1913; and, of course, it is above criticism. He will be glad to correspond with physicians who have patients in need of such service. His address is Dr. Wm. K. McLaughlin, State-Lake Building, Chicago.

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peculiarly adapted to the needs of the sick and the well. Its buildings are well-nigh ideal, and all modern facilities are at hand for the care of its patients. Its staff is composed of experts, and all of the attendants are trained to one end,—the comfort and the contentment, leading to a cure, of all who seek treatment at the sanatorium.

Above all we have enumerated, is the atmosphere of the place. It is an atmosphere of good-will and of hope, which gives the discouraged patient—all patients, in fact—an uplift gained in no other way.

The Sanatorium is located at Stevens Point, Wis., and all interested physicians are invited to correspond with the management. Dr. J. W. Coon is the Medical Director; and Dr. F. E. Walbridge is the Surgical Director.

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No. 5

FOREIGN BODIES IN BONE AND SOFT TISSUES*

BY ARTHUR N. COLLINS, M.D., F.A.C.S.
DULUTH, MINNESOTA

To approach this subject with a clear vision it is essential that the limits within which the discussion will proceed be stated. No academic presentation of all methods of diagnosis, localization, and treatment of foreign bodies is here undertaken. Treatment of the subject of foreign bodies in and about the organs of special sense is left to those better able to enlighten you. Likewise the subject of foreign bodies within the various passages (trachea, nares, etc.) and viscera is omitted.

A sense of misgiving is perhaps a common experience with those who encounter the problems of properly dealing with a foreign body embedded in the tissues of the human organism; however, it is consoling to assume that the last word in the localization and removal of foreign bodies has not yet been said. In the words of Emerson: "There is not a piece of science but its flank may be turned tomorrow; there is not any literary reputation, not the so-called eternal names of fame, that may not be revised and condemned."

The cases studied by the writer were all from the surgical service of the Base Hospital, Camp Dodge, Iowa, and most of them are the results of battle casualties, chiefly metal fragments in the bony or the soft tissues. By no means is this to be considered exclusively a military subject, for every surgeon has, or will sooner or later have, occasion to wrestle with the problem of a foreign body in the tissues for localization and, perhaps, for removal.

The subject will be considered under the following heads:

1. Localization of foreign body.
2. Symptoms and signs of its presence.
3. Necessity for its removal.
4. Complicating infections.
5. Condition of the patient.
6. Treatment.

1. *Localization*.—The problem of localization is highly important, and resolves itself into acquiring a knowledge of the position of the foreign body with relation to certain fixed points. These points may be anatomical points or artificially placed points, such as coins or wires anchored to the outside of the limb or other part of the body within which the foreign body is lodged. The chief factor in this process of localization is the *x-ray*. Other kinds of apparatus for measuring distances have been introduced from time to time, but they are useless without the *x-ray*. Some of them are exceedingly valuable in certain cases *in conjunction with* the *x-ray*. Different radiologists are prone to adopt a piece of apparatus which may have a special appeal, and still the surgeon often experiences many difficulties when operating for the removal of a foreign body, even after the röntgenologist has made an accurate localization; therefore, for practical purposes at the operating-table, that is, at the time of the attempt at removal, the simplest and most direct method of approach appeals to the surgeon. The fluoroscopic screen is one of these, and it is here that mutual co-operation between the röntgenologist

*Read at the meeting of the Soo Railway Surgical Association, Minneapolis, December 9, 1919.

and the surgeon is essential. The surgeon, with the aid of the röntgenologist, should acquire his own visual impression of the foreign body and its location at the time the patient is "screened" and before attempting removal, for, as Shearer has wisely observed, "the operator" [the surgeon, as well as the röntgenologist] "is an essential part of the localizing apparatus." It is frequently of advantage for the surgeon to approach the foreign body at operation with the aid of the fluoroscopic screen. The writer has found this method highly efficacious in a few instances. Darkness in the room, the danger of infection, and the danger of anesthesia in the presence of sparks may be considered contraindications to this method, and may have to be taken into account in individual cases.

The stereoscopic *x*-ray is most valuable in the

may have been successful in their hands, but we did not have much success with it.

On the whole, we found the fluoroscope and the stereoscopic radiograph most valuable, noting carefully the relative positions of foreign body and anatomical points.

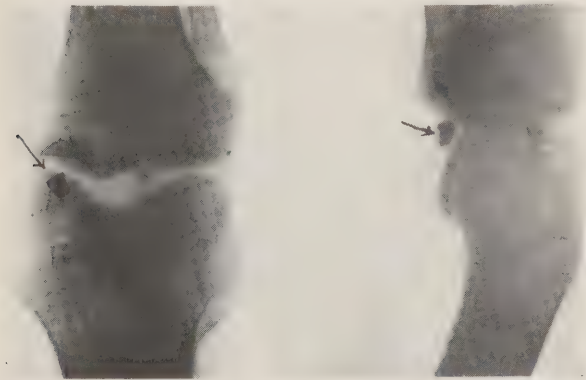


Fig. E. Shell fragment in periphery of the right knee-joint posterior to the internal condyle of the femur, and by means of parallax localization described as 2.5 cm. from the posterior popliteal skin. Found at operation lying in the posterior capsule.

chest, joint, and head regions. With intrathoracic foreign bodies a fluoroscopic examination should also be made to observe whether the foreign body moves with the respiration or with the heart-beat.

Caldwell used a complicated apparatus giving a stereofluoroscopic view of the foreign body, but this method is not in common use on account of its complexity. He used a slender trocar or cannula with a piano-wire in its lumen, devised by Sutton, to aid in localizing the foreign body. With the aid of the screen, the trocar and cannula are pushed into the soft tissues down to the foreign body, the trocar withdrawn and the hooked piano-wire inserted through the cannula down to the foreign body when the cannula is withdrawn and the wire left in place to guide the operator. This method seems simple and



Fig. D. Shell fragment in the soft parts below the middle of the os calcis 1 cm. long lying 1 cm. in front of and in line with the spur of the os calcis and in line with the interior bony arch; apparently three-quarters inch above the plantar surface.

2. *Symptomatology.*—The symptomatology accompanying the presence of a foreign body naturally depends upon the region in which the fragment is located. In bony tissue there are usually necrosis and a sinus. If the fragment lies close to a nerve, considerable and variable pain is felt, amounting to intense causalgia in cer-

tain cases; if close to a joint, pain or discomfort on motion or complete disability at the joint. (Fig. E.) If close to a fairly large artery, such as the axillary, there may be a throbbing sensation. Tenderness is common where the foreign body is superficially situated, especially if situated where pressure occurs. (Fig. D.) A foreign body in lung tissue may be entirely symptomless, or it may be attended by pain, cough, and bloody sputum; or it may lie in the center of a secondary lung abscess. If situated near the pericardium, a foreign body may cause a dull aching pain most of the time, as in one of the cases here shown. (Fig. M.) Many of the foreign bodies have carried infection in with them, and a sinus persists until the foreign body

removal of a foreign body frequently demands an answer to the question, "Is it causing symptoms?" as in the case of a shrapnel fragment in the right lobe of the liver here shown. (Fig. W.) This patient was entirely free from pain or discomfort, with no sinus, and was in perfect health and vigor otherwise. Pressure-symptoms indicate the removal, as in the case with a fragment in the soft tissues beneath the heel. (Fig. D.) A fragment in the mediastinal region, cited in the case above (Fig. M), close to the right side of the pericardium, was removed because of aching pain, a discharging sinus, and the desire of the patient for its removal.

The mental attitude of the patient is frequently an influence in deciding upon removal even though the other indications above stated are not prominent. The knowledge that he has a foreign



Fig. M. Shell fragment in the chest to the right of the right border sternum (dotted outline) and just above the line of the diaphragm; apparently against the right border of the pericardium. No motion apparent on fluoroscopic examination. On the level with the space between the right 5th and 6th ribs.

is removed. (Fig. V.) These may be embedded either in bony or in soft tissue.

Private M., wounded by the fragment of a high explosive on November 24, 1918. A stereoscopic plate of the chest shows a foreign body just to the right of the right border of the sternum and just above the line of the diaphragm, visible between the 5th and 6th ribs at about their junction with the sternum. Fluoroscopic examination shows no motion with respiration or with cardiac rhythm. The foreign body is lying apparently against the right border of the pericardium. It was removed at operation in April, 1919, on account of the aching pain, a discharging sinus, and a desire for its removal.

3. *Necessity for removal.*—The necessity for



Fig. V. Lead disc 2 cm. in diameter; surface facing and about 1 cm. from the outer (lateral) margin of the femur and about five and one-half inches below the greater trochanter.

body lodged in his tissues makes the patient uneasy until it is removed.

4. *Complicating infections.*—Infections complicating these missiles embedded in the tissues were those commonly found in most of the battle wounds, namely, streptococci and staphylococci. All such wounds had been treated soon after injury, or entrance of the foreign body, during or after battle, with a prophylactic dose of anti-tetanus serum. If left undisturbed, therefore, no fear of tetanus was entertained. If, however, in old, long-standing cases with considerable scar tissue an operation for removal was contemplated, necessitating disturbance of the old scar tissue, another prophylactic dose of the serum was given before operation was undertaken.

5. *Condition of the patient.*—The condition of the patient influences the necessity for removal in some cases. When he is very ill from some other cause or is profoundly septic from the wound containing the foreign body or from some other wound, it is usually inadvisable to undertake operation for the removal of the fragment. (Fig. VH.)

This patient had a shell fragment, $2 \times \frac{1}{2}$ cm. at the base of the neck in the back apparently between the transverse process of the vertebra on the right and the articular portion of the 2d rib. On admission he had a freely discharging wound and fever. The wound was Dakinized and he was held for future operation.

6. *Treatment.*—The treatment for these foreign bodies embedded in the tissues is either to leave them entirely alone or to remove them under surgical precautions. If they interfere with the action of tendons or cause pain on



Fig. W. Shell fragment in the right lobe of the liver. The screen shows it moving with the respiration. The fragment lies on the line with the 11th intercostal space posteriorly and four inches from the median line and to the right.

motion or pressure-symptoms, they are better removed, even though there is no other indication therefor; as stated above, the necessity for removal depends largely upon the presence of symptoms.

When surgical removal is decided upon, strict surgical asepsis, together with proper antisepsis, is carried out, depending upon the presence of a complicating sinus. The skin over the field of operation is thoroughly scrubbed before operation, and, after drying, is painted with a solution of picric acid (5 per cent) in alcohol. It is frequently necessary to make the incision with the patient in a position different from the one in which the radiograph was taken. The incision is often made at a point remote from the wound of entrance of the foreign body. Individuals vary greatly in the thickness of the various parts; therefore no dependable standard of distances from skin to skeletal points can be assumed.

It is sometimes necessary to choose an approach from a disadvantageous direction, in order to avoid prominent nerves or vessels. When the neighborhood of the foreign body is reached there is usually a discoloration of the tissues, darkened and metallic in hue. A metallic scratching of the instruments, as of metal against metal, indicates approximation with the foreign body, and the sensation usually strikes joy to the heart of the operator.

When the foreign body lies close to a large vessel or nerve it should be dislodged very carefully to avoid injury to such structures. Where operation seemed necessary in a septic field, wounds were left unsutured, or partly sutured, to allow for proper Dakinizing and gradual closure. If the fragment was not found, after protracted search, an artery forcep was clamped

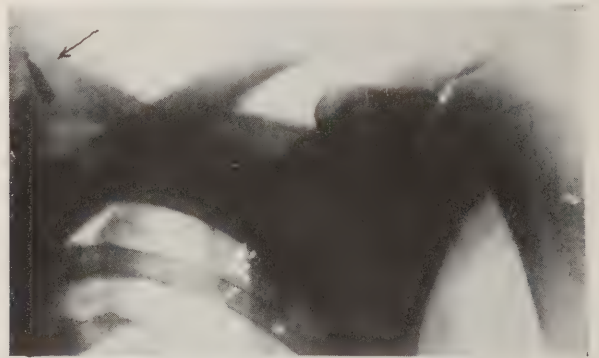


Fig. VH. Shell fragment 2 cm. long, 0.5 cm. wide between the 1st and 2nd rib base of the neck at the back; apparently lying between the transverse process of the vertebra and articular portion of the 2nd rib.

to a bit of tissue in the bottom of the wound and the patient sent to the x-ray room for radiogram before being returned to his bed. A stereoscopic radiogram shows thus the relative positions of instrument and foreign body and the removal may be quickly accomplished at another sitting within a day or two. This may be done under fluoroscopic guidance of the instrument within the wound.

The lessons to be drawn from the foregoing are the following:

1. Localization of a foreign body is highly essential, but is rarely *absolute* from the surgeon's point of view.
2. The surgeon with the radiologist's aid should acquire *his own* visual impression of the foreign body before operating.
3. A foreign body in the chest should be *screened* as well as *stereoscoped* in order to ob-

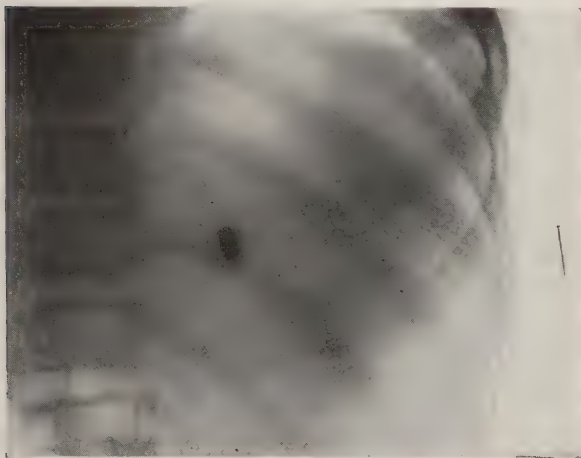
serve whether it moves with respiration or with the heart beat.

4. Necessity for removal depends largely on presence of symptoms.

DISCUSSION

DR. JOHN H. RISHMILLER (Minneapolis): In abdominal injuries caused by penetration of foreign bodies, I think the temperature should not be relied upon so much as the leucocyte count in determining whether or not infection is developing. The leucocyte count, made, say, every six hours, is, in my opinion, very much more important than the temperature, which may be normal, while the leucocyte count will show any abnormal increase. I wish to recite a case in point.

CASE.—On April 21, 1919, Henry S., aged 15, an American of Norwegian descent, entered the hospital in Minneapolis. On April 20, while gopher hunting, he was accidentally shot with a .22 caliber rifle by a boy companion. There was a bullet wound between the seventh and eighth right ribs, in the axillary line. The leucocyte count was 11,800. Urinalysis did not reveal



This photograph reveals the bullet on the posterior surface of the eleventh rib. The lead scrapings from the bullet can be seen on the rib. The entrance point of the bullet is indicated by a pin and the letter O at the right.

any abnormal ingredients, and the right kidney must have escaped the bullet.

Radiographic examination of the right side of the chest, with a metal marker where the bullet entered, revealed that the bullet struck and was deflected by the eleventh rib on the back, and that the bullet was located one and one-half inches from the spinal column, close to and on the outside of the eleventh rib. From the interpretation of the *x*-ray findings the bullet must have penetrated the liver and peritoneal cavity and likely also the pleura, but not the lung tissue, as there was no evidence of blood in sputum. (See illustration.)

April 22: After examining the *x*-ray plates, it was easy, by palpation, to make out a hard lump one and one-half inches from the spine about three-fourths inch above the level of the bullet hole. After the bullet was definitely located a long needle was thrust, as a landmark, through the superficial skin. The skin was then cleansed with gasoline and alcohol. Novocain, 2 per cent solution, 120 m., was injected over the small hard

area on the back with the patient in Sims' position. A two and one-half inch perpendicular incision was made with the center over the bullet. After cutting through the muscular fascia, a dark area was observed in the heavy muscles of the back. The bullet was extracted with forceps. A questionable gray and bluish area was detected in the muscle, which was entirely removed with scissors. The muscular fascia was united with four ten-day iodized catgut, allowing a liberal opening for a gauze drain. The skin wound was closed, with the exception of the gauze drain, with six silkworm gut sutures. Dry gauze dressing was applied, and held in place with two adhesive straps. Abdominal binder applied.

The leucocyte count in this case was vigilantly studied, and as the leucocyte count decreased, I was fairly positively assured that no shreds of his garments had been carried into the liver substance, causing supuration and subsequent abscess formation.

DR. JOHN J. MCGOVERN (Milwaukee, Wis.): Foreign substances enter the body in one of two ways: Through one of the natural openings or through the skin. A foreign substance may be in the body after gaining entrance through any of the natural openings, the mouth, nose, ears, esophagus, bronchi, bladder, urethra, and rectum. A foreign body may be left in the abdominal cavity after a surgical operation, or may be in the body in the form of a calculus, such as gall-stones or kidney stones. A foreign body introduced through the mouth or nose is generally very easily removed; and as a rule, foreign bodies in the ear are easily removed. The latter are found mostly in children, and sometimes in the insane. A foreign body in a bronchus is a very much more serious matter. It generally produces a pneumonia if not removed very soon after its introduction. Foreign bodies in the bladder, urethra, or rectum are difficult to remove, and sometimes their removal involves an operation which requires a great deal of skill.

One of the most common experiences of the medical man is a foreign body in the shape of a needle introduced into the hand. In my early experience I used to make rather frantic efforts to remove the needle immediately or as soon as I could. This was before the time of the *x*-ray. I now have an *x*-ray picture taken to locate the needle; in fact, at least two pictures should be taken at right angles to each other so that the needle can be properly located. If the needle is very deep in the tissues, I let it alone. Recently I had a case in which a large portion of a heavy needle was in the palm of the hand. I took the *x*-ray pictures and decided to let it remain in the hand, as it caused very little inconvenience. Six weeks later I removed it from directly under the skin in the wrist by just a very small incision, and pulled it out with a forceps.

Major Penhallow, of Harvard, has given a number of surgical rules for handling the different bullet and shrapnel wounds with which he had experience while in charge of a military hospital in England, which seem to cover the subject very thoroughly:

First, a missile in an infected wound should be removed.

Second, a missile in the region of a blood-vessel, nerve, or joint that is causing pain or limitation of motion should be removed.

Third, a missile that is causing inconvenience or disturbance should be removed.

Fourth, a bullet that is not causing disturbance, but is situated where the surgical operation required for its removal may destroy a great deal of important tissue, should not be removed.

Fifth, large shrapnel or large shell fragments, which are produced by explosion, are generally infected, and should be removed.

Sixth, small fragments of shell that are difficult to find and are not making much trouble should not be removed.

Seventh, shrapnel bullets that are not making trouble should not be removed, although the author warns that there is greater danger of infection from a shrapnel bullet than from another kind of a bullet.

Eighth, foreign bodies directly under the skin should be removed.

DR. COLLINS (closing): It is one thing to have an abundance of material of all kinds, to have plenty of

assistants, such as we had in the Army and an unlimited co-operation in the *x*-ray department, and everything else contributing to all of our work; and it is another thing to come back home and find that we haven't these things to the same degree.

About ten days after my return I was called to attend a bullet wound of the chest in a boy who after dinner shot himself, aiming at the heart, but missing the heart and shooting past it into the chest.

In these cases fluoroscopic examination of the chest should be made to determine whether or not a foreign body is present. Radiographic examination of the left chest showed that the bullet was presumably in the muscles posteriorly. I did not operate for its removal, but treated the case along conservative lines, and later on operated for a secondary empyema, which developed following extensive intrathoracic hemorrhage. A stereoscopic radiograph made several weeks later showed the bullet lodged in the tissue of the collapsed lung.

THE INADEQUATNESS OF SIGHT FOR THE MODERN DEMANDS MADE UPON IT, AND TREATMENT*

By DAVID OWEN THOMAS., M.D.; M.R.C.S.; L.R.C.P., London

MINNEAPOLIS

Dr. Lauder Brunton related to me that as secretary of the Edinburgh Medical Society, he looked over the old records, and found that one meeting had been devoted to the subject, "Had Menstruation Established Itself While Eve Was in the Garden of Eden?" The Scotch being noted as metaphysicians, it may be that those venerable doctors questioned that Platonic love is wholly a thing of the mind, and doubting that, if our first parents were wholly innocent, there would be any catamenial functioning or that anatomical differences would assert themselves, for how could a couple that had no disagreement split the difference and raise Cain?

This historical incident shows that medical societies delight occasionally to cultivate the lighter entertaining diversions, as well as the heavier theories and principles of practice and clinical reports. The faculty to see things in their right proportion is the source of the sense of humor and cheer, and the secret of all solid progress. The theories of vision are beset with difficulties, so we draw conclusions only from established data. As medical men it is not enough that we teach prophylactic eye treatment for the new-born, and conservation of sight for adults; for the selective draft of the late war has shown a defective vision in young adults that

was truly surprising, causing the rejection from service of about 20 per cent. And the inadequateness of the human sight for its modern demands is so well known as to need no proof; but how we were chosen to explain this deficiency and to suggest the new remedy for its improvement, may remain for the present a mystery. In new departures, reading papers, like measles, is an epidemic that takes young methods and new specialties. You would hardly catch the contagiousness of our theme without some effusion, or volatile eruption in the way of a paper, or little innocent desquamation in the way of charts, etc.

The care of the child of late has been largely in the hands of specialists,—the obstetrician, the pediadrst, and the ophthalmologist; and our apology for entering the field with this paper is, that we found a large corner of it sadly neglected. Having thus unavoidably entered the field, we hope our treatment of the problem will somewhat approach the specialist viewpoint. (For the presumption to speak as a specialist, I find here a marginal hieroglyph, with this legend: "A rooster returning home to his usual roost in a barn one evening, found to his surprise the premises pre-empted by some big horses; therefore, that his intrusion and his own hilarious song might not be misunderstood, he

*Presented before the Hennepin County Medical Society, February 2, 1920.

said: 'Let us be careful this evening, gentlemen, that we don't step on each other's toes.'")

There is a commendable sentiment in this country, holding that the children are entitled to the best; and the young mother is progressive and ever ready to listen, and determined that the American baby must get the latest medical idea, and the latest invention is generally accepted if it has a little scientific frill, and is presented with some show of dignified authority. Talks to enlighten the public are common; therefore the inquiry as to whether the deficiency of vision is due to biological or cultural causes is opportune, and will relieve somewhat the sameness of discourses on nursing, tonsils and adenoids, focal infections, etc., and will increase respect for original research in the medical profession. The laity, inclined to gossip so knowingly about medical expedients, as if they were fads, will find themselves beyond their depth when they hear how children will be receiving practical evolution according to the new technic.

The sense of sight is so important, transcending all others, and contributing so largely to human happiness that we are justified in proposing new methods and more refined technic in its development and care. Extraordinarily good sight is an aid to man's efficiency in every sphere of activity; and its more perfect development and preservation are very essential to the making of the evening of life complete and enjoyable. What is more to be desired than that the medical man, esteemed in his community after long, active, and useful life, should repose under well-won honors, feeling kindly and generous towards all comrades who continue the struggle for fame, watching their success, and, because his sight is good, keeping pace with the world through his daily papers, medical journals, and books?

But, if we are to improve the sight of the man, it is a well-established fact that we must begin with the child. What then is our thesis? We maintain that there is in Nature a relation between structure and function; and we hold that the human eye was formed adequately and well for man's occupations formerly in unscientific ages. But modern progress has developed so rapidly on lines that Nature had not anticipated, that the evolution of the eye has failed to keep pace, consequently the sight is imperfect and very insufficient for its present demands. Nothing foreshadowed the renaissance; therefore Nature could not anticipate that a laboratory worker

should do microscopical work for six or eight hours a day, so as to prepare him an eye that could see micro-organisms without the aid of all manner of staining. If one with the eye of a blue heron or a humming bird could look through an objective possibly the germs of measles, scarlet fever, and smallpox could be seen. If aviation had been brought about by an evolutionary ascent through countless generations, like that from fish to bird, Nature would have eliminated visual defects, little noticed and trifling in consequence to the man on foot, but dangerous and fatal to him when he mounts the air. If Nature had anticipated that man would have to fly he would have had an eagle eye, with a range to see an antagonist at a long distance. The swallow has an eye that can see and catch a gnat when flying thirty miles an hour. Birds of prey,—the hawk, for instance,—half a mile high in the sky, can spy a prey in the grass, at our feet, invisible to the human eye, and descend on it like a shot.

Granting that the imperfectness of the human eye is due to incomplete evolution, what is the suggestion of Nature for its development, and, at this juncture, what is the responsibility of medical men, and those especially who have the medical care of children? Is it not incumbent that our profession should study Nature's processes and supplement the deficiencies by practical evolution? The sense of sight, by early cultural development, may be raised to three potentials, which may be differentiated as (1) the power of observation, (2) the power of search, and (3) the latent undeveloped sense of acuity.

1. We know that it is possible to see what we do not observe. Newton, by means of a prism, had seen a ray of white light refracted into its spectrum, but he had failed to observe that the spectrum was intersected by certain dark lines. These were observed by Wollaston, but it was Frankhofer who observed that they never varied and that they numbered nearly six hundred. And it remained for Bunsen and Kirchhoff, in 1860, to discover through these dark lines that each metal when in an incandescent state, exhibits a distinct spectrum of its own, and finds its exact counterpart in the solar spectrum.

2. The power of search is also amenable to cultivation, for by continued searching Leeuwenhoek, in 1687, discovered bacteria; but it was not until 1877 that Koch, by observing the behavior of anthrax bacilli, announced the germ theory of disease, and laid the foundation of the science of bacteriology.

3. But to prove that medical men can aid the evolution of the optical apparatus in the interest of finer acuity by a new technic, necessitates an approach to the problem through an intelligent study of the essential elements of vision, in their development and operation.

The organism of sight begins to manifest itself very early in embryonic life, but is exceedingly slow in development. The epiblast and mesoblast co-operate in the process, even to the extent of furnishing two different kinds of pigmentary cells to the eye. The crystalline lens and refractive elements are an ingrowth of the epiblast; but the retina originates from an eversion of the anterior brain vesicle, and part of this protruded cerebral vesicle becomes optic nerve. Though the eyes are terminals of the optic nerves, they are not to be classified as nerve-endings, else it might be asked, why did two nerves, and only two, take on this development, and make possible the sense of sight with differentiation of light, form, color, movement, optical memories, etc.? More accurately speaking, the eye is a nerve-ending amalgamated with ganglion cells, retaining elements modified from the embryonic brain; so that we have in the retina and optic tracts actual brain cells and cerebral photochemical fluid.

The outer coverings,—sclera and choroid,—are perfectly opaque, forming a photographic camera impervious to light, except that which enters through the pupil; and this light by means of the dioptric apparatus (cornea, iris, lens, ciliary muscle, etc.) is focused on the sensitive plate called "retina." The retina itself is a highly elaborated membrane, consisting of ten layers, the best known of which is the layer of the rods and cones. The red pigment, called "rhodopsin," which supplies the visual purple, is found only in the external segments of the rods; the cones do not contain it. The cones predominate and occupy almost exclusively the central portion of the fundus oculi, called the "macula lutea," which has to do with direct vision; while the rods are found in the paracentral regions and are more and more numerous towards the periphery. In birds and other animals of acute vision the proportion of cones to rods is much greater than in the human eye.

The experiments which named the rods and cones as the perceptive organs have been unmistakably confirmed. Mariotte discovered that there is in the visual field a blind spot, corresponding to the entrance of the optic nerve, thus proving that its fibers as exposed there are in-

sensible to light. The Purkinje experiment proves that we see the image of our own retinal blood-vessels, which anatomically reach the external nuclear layer; therefore vision must still be external to this, or actually in the layer of rods and cones, and Müller traced the delicate films of the optic nerve through the various layers to their termination in the rods and cones. But, while it is generally conceded that these terminal fibers of the optic nerve are the perceptive organs, there are many varied theories of vision. Edrige-Green recently advanced the theory that cones are the terminal perceptive organs and that the rods are mainly for the formation and distribution of the visual purple, that under the action of light the pigment of the rods is decomposed, and thereby the fluid which surrounds the cones is sensitized to receive photochemical stimuli, which are transferred to the visual center in the occipital lobe. While this theory appears to explain the action of the pigment satisfactorily, it does not seem to describe the entire function of the rods, which equally with the cones are anatomical terminals of the optic nerve. (F. W. Edrige-Green, M.D., *Brit. Journ. of Ophthal.*, 1917.)

It is supposed by some that color perception and vision under bright illumination are obtained through the cones exclusively, because night-seeing animals, such as owls, lack the cones, and must obtain their vision by the rods. Abaranque examined the retina of *Didelphis marsupialis*, a purely nocturnal animal, and found rods only, which is in line with a view formerly held that rods are the organs for vision in the dark, and cones for day-light vision. (*Amer. Journ. of Ophthal.*, January, 1918.) The supposition that animals without visual purple or rods could see very well was based on erroneous observations, for subsequent observers have found both, for instance, in the bat, butterfly, and tortoise. (*Amer. Journ. of Ophthal.*, p. 308, 1915.)

In the study of vision, there is much that we do not know, but it seems that both rods and cones are perceptive organs to bear impulses of different character; the cones operating mainly for direct vision, color, and form under bright illumination, and the rods acting for orientation, that is, to enable us to get our bearing, determine distances, and relative positions of objects. The rods and cones are closely placed histologically, analogous to the elements in a battery, and the light by its actinic and thermic rays acts chemically as a solvent on the pigment of the rods,

thereby sensitizing the fluid which surrounds the cones to receive instantaneously, if not electrically, images according to the quality of the impulse.

The retina has no connective tissue, for since the rays of light must reach the rods and cones, all the structures, even the walls of the blood-vessels, must be transparent. The pigmentary layer forms the most external part of the retina, and consists of a single layer of hexagonal epithelium cells, from which fine pigment filaments are prolonged internally between the rods. Upon exposure to light, pigment granules are found extending along these filaments between the rods (Kühne), probably for the restoration of the visual purple, which had been bleached by light.

It has been shown by the perimeter that the outermost zone of the retina is color-blind. But, if, in testing, we move the object gradually from the periphery towards the center of the field of vision, we first notice only the movement of the object, and then become able to recognize the color. Thus, two facts are disclosed by the perimeter: first, that color is recognized in the central field because the cones, rather than the rods, are located there; and, secondly, that the different colors are recognized in different zones. The field of vision for green is central and small, slightly larger for red, still larger for yellow, and largest of all for blue. The zones of color are determined by the wave-lengths of the rays refracted. The chemical or physical properties of the pigment of the rods are very imperfectly known, but it appears that color-blindness is due to deficiency of some specific pigments, consequently we have red-blindness (Daltonism), green-blindness, etc.

Histological studies of sight have been greatly aided by clinical reports of brain injuries, which demonstrate that lesions of the visual centers are accompanied by constant, definite, corresponding disturbances of the retinal field of vision. Wilfred Harris, in 1897, explained that in cases of transient hemianopia following epileptic attacks, the ability to recognize the movement of objects returns before perception of color and form. Captain C. Riddoch, in reporting disturbances of vision due to injuries of the occipital lobes in the great war, reached the following conclusions: (1) that the consciousness of "something moving" should be recognized as one of the visual perceptions; (2) that it may be dissociated from the perception of a stationary object; (3)

that where recovery of vision occurs, the perception of "movement" precedes that of the object, and (4) that recovery of movement vision begins at the periphery. (*Proc. R. Soc. of Med., Sect. Neurology*, November 23, 1916.)

Dr. Gordon Holmes reports a series of most interesting cases of visual injuries, in the *British Journal of Ophthalmology* for 1918, illustrating "Disturbances of Vision," and "Disturbances of Orientation," in soldiers suffering cerebral lesions in the late war. The observations are minute and cover varied conditions, but the findings are too extensive to attempt a full summary of conclusions. Some lesions resulted in scotoma of the central field, while in others there were no impairment of central vision, no interference of the pupillary reflex, and no abnormality of color and stereoscopic visions, but still serious disturbances of orientation and localization by sight, inability to estimate absolute and relative distances, and failure to recognize relative lengths and sizes. From the following paragraph, you will gather the nature of the reports, for this paragraph tells of a man who could see well, but had no power to direct his vision. Dr. Holmes says:

The most striking features were his inability to seize or touch directly any object presented to him, and even to extend his hand in the proper direction towards it, though he could perceive and recognize it, and his difficulty in fixing with his eyes anything held in front of him. When asked to look at the observer's face, for instance, he generally stared open-eyed in a wrong direction and then moved his eyes about in an irregular manner, most commonly towards the ceiling, saying, "Sometimes I can see it quite well, but often I cannot see what I want to look at." On the whole, he seemed to see better the less effort he made. (*British Journal of Ophthalmol.*, September, 1918.)

In review of Dr. Holmes' reported cases, Sir George A. Berry thinks that the symptoms observed support his personal view that the rods are for orientation and adaptation. That you may draw your own conclusions I have endeavored to reproduce some of the charts.

[Charts and lantern slides were demonstrated, showing that injuries to the occipital lobe, at the posterior end of the calcarine fissure, were attended by central or paracentral disturbance of vision, or scotoma. And lesions represented in the anterior calcarine areas were associated with impairment of peripheral vision, or disturbances of orientation.]

Having now ascertained approximately the respective functions of the rods and cones, our

next inquiry is, what is the relation of the visual purple to vision? Kolliker and others have found that epiblastic, or retinal, pigment is deposited very early in embryonic life, its rudiments being visible by the end of the fourth week in man, and perhaps fully formed at the twelfth week, while the mesoblastic pigment in the ciliary body and iris is scarcely represented even at birth. (*Annals of Ophthalmol.*, p. 627, 1915). Then in that case, we have at birth the retina, delicate as a photographic plate, fully developed, and the iris without pigment, consequently wholly unprepared to shield and protect it from the light. But is the light injurious to the visual pigment in early life? For what purpose has Nature designed that an infant should be born with eyes closed, and that they should be kept closed in sleep for the greater part of every twenty-four hours? And has not Nature contrived through the ganglion cells and pupillary center in the corpora quadregemina a provision for automatic and instantaneous contraction of the pupil, so as to prevent impairment of the visual pigment from bright illumination? The mother instinct in the Indian squaw and primitive races forcibly teaches that light should be excluded from the eyes of the newly born. And is it not true that even if adults look at the sun the visual purple is bleached, so they are unable to see until they close the eyes for a sufficient time for the retina to regenerate the visual purple? No doubt continuous daylight would exhaust our fund of visual purple, so we have night, not simply for sleep, but to furnish darkness which is essential for the constructive chemistry of the retinal fluids. The fact that the pupil contracts to light at birth, long before the infant can attempt to focus anything, is most suggestive. And the investigations of savants demonstrate that pigmentary changes produced by intense light invariably result in partial or complete impairment of sight. Dr. Melville Black reported the case of a soldier, aged 33, who three years before entered into a sun-gazing contest with two other soldiers. They were endeavoring to see which one could look at the sun longest without winking. This man won the contest, but sustained a scotoma of the macular regions which reduced his central vision to one-half of normal, and made it necessary for him to retire from the army. With the ophthalmoscope there was seen in each macular region a spot about one-fourth the size of the disc, lighter in color because of the damage to the visual pigment. One of the others who had not looked at

the sun so long, also sustained a temporary scotoma.

Snow-blindness is produced similarly by the action of dazzling sunlight reflected from snow, especially at great elevations, since the sunlight there is richer in ultraviolet rays, and more liable to cause erosion of the cornea, photophobia, and scotoma. Electric light of high voltage likewise may injure the retinal pigment and cause transitory or permanent disturbance of vision. The damage is more persistent in cases where the lens has been removed by cataract operation. After every eclipse of the sun, numerous cases of this sort are seen among persons who watched the eclipse too intently with glasses insufficiently smoked. After the eclipse of 1912 Adolf Jess found twenty-six cases of total or partial ring scotoma, with impairment of vision.

It has been shown by Professor Fuchs and others that the amount of epithelial pigment is constant in normal European eyes of all races and complexions, except in albinos, where we find want or absence of pigment in the hair, skin and eyes. The deficiency of retinal epithelial pigment in the albino is attended by defective vision, ametropia, nystagmus, and photophobia. (*Annals of Ophthalmol.*, p. 628, 1915.) But wearing amber glasses improves the sight, as if the colored glass supplemented the deficiency in visual purple. It was believed by Dr. G. F. Libby and Dr. Edward Jackson that amber glasses actually increased the pigment in the iris and macular regions of one albino.

Night-blindness is a well-known symptom of liver disease with jaundice; and Arnold Knapp states that changes in the retinal pigment epithelium have been reported. He thinks that this occurs through changes in blood condition, because it is known that bile acids cause a solution of the visual pigment. We cannot refer to all the inflammatory diseases that give rise to pathological pigmentary changes, such as retinitis pigmentosa, and hemeralopia, such as was found in Belgian soldiers from malnutrition and exhaustion. But in every instance, pathological lesions affecting the retinal pigment are attended by corresponding impairment of sight; while, on the other hand, acuteness of vision is contingent upon its normal and adequate deposit. And as structure, the foundation of function, should be laid in infancy, it is a wonder that no effort or research has been made for the better development of it in the young.

We have known doctors with sufficient power

of search to make faultless blood-counts and keen observation as diagnosticians to note the least aberration in fibrillation tracings, but, when it comes to recognizing an old patient and remembering his name, they present a look of strangeness, as if meeting the new ambassador from Turkey for the first time. These embarrassing failures to recognize, and seeming lapses of memory, are not due to emboli or thrombosis, but occur because the visual purple is inadequate to take a good retinal photograph of the distinctive features of the patient to be transferred for registration in the cerebral archives.

The inadequateness of sight which we have demonstrated calls for practical evolution; and, more especially, because there is no hope of improving vision in general by heredity, for with fortuitous mating of dominants with dominants occasionally, recessives would be equally prolific.

On the other hand, according to the Mendelian doctrine, education cannot create capacity; it can only enable the individual to utilize more fully his inherent potentialities. While evolution is accepted, its theories are still vacillating, and it often happens that the speculation of today becomes the theory of tomorrow. The behavior of somatic cells which undergo differentiation and germ-cells which do not share in body-making, but retain the hereditary qualities intact, are very imperfectly understood, as they react to laws that transmit variability and variation in the offspring. Lamarck, in an unscientific age believed in the transmission of acquired characters, while Weismann, sceptical of the proof, denied the transmission of acquired modifications. Infective diseases are acquired, consequently not hereditary. It is explained that a child may inherit the lungs of a tubercular father, but not the tuberculosis; and that syphilis may appear in the offspring of a syphilitic parent, but not strictly as a fact of inheritance, but by infection of the fetus. The acquired traits of prodigies and the mutilations of cripples are not transmitted. A superior athlete cannot transmit his feats or stunts, nor a distinguished educator his attainments; their children must begin with the alphabet. However, the modern view-point has reacted slightly from the extreme Weismannian doctrine; for the experiments of Stockard show that in guinea-pigs repeatedly intoxicated with alcohol, the germ-cells are enfeebled, so that the offspring is weakened and more liable to die. In like manner, the influence of radium rays injures the germ-cells of frogs and enfeebles the off-

spring; therefore, if the germ-cells are capable of responding to unusual and unknown stimulation, it is not impossible that they are influenced also in a functional way by the exertion or performance of the individual himself. It is widely believed among breeders that functional characters, such as speed and milk-production, are transmissible. In urging this point of view, Redfield has pointed to the records of horse-breeding, one of the fertile fields for the accurate study of heredity, and has shown that active training is indispensable to the transmission of hereditary qualities. Speaking of race-horses, Fischer says that "the winners of a new generation are the progeny of hard working parents, the losers the sons and daughters of the retired best families." The way that Nature improves function is by the gradual responding of the germ-cells to unusual stimulation under favorable conditions.

In the application of these biological principles, it is advisable to ask, what are the suggestions of Nature for the more perfect development of sight? We would invite your attention to two important laws of evolution. In the first place, we should note that vestiges are records of progress; therefore rudimentary structures prove that the sense of sight has undergone extensive changes, and evidences are abundant that it is still susceptible of important improvement. In the frog sometimes we find a minute light-colored spot on top of the head, midway between the eyes. This marks the position of a little vesicle beneath the skin attached to a little stalk, the functionless vestige of the pineal eye. There is reason to believe that the remote ancestors of all vertebrates had an additional pair of eyes on top of the head. Traces of this second pair called pineal, or parietal, eyes, are yet found in lampreys and lizards, and especially in the New Zealand giant lizard tuatara, supposed to be the oldest type of terrestrial vertebrate, whose existence is believed to date back to the paleozoic period of the earth's history. In birds and mammals all traces of the pineal eye has disappeared, but a vestige of it probably is to be recognized in the so-called pineal gland, which Descartes endeavored to identify as the seat of the soul. These vestiges demonstrate the inherent power of the eye to change its structure to meet increasing demands, and suggest that there may still be in the brain more potential vision, which has not been localized; for, when the external pineal eye became atrophied from disuse, it is possible that

all its internal photochemical nervous elements did not become centralized in the present optical apparatus. If the internal rudimentary counterpart of the external pineal vesicle, in exceptional cases, is still localized, but displaced, it may explain the basis of telepathy, the power to receive impressions at a distance, and see objects without the normal operation of sense organs. I was led to offer this reflection by recalling that Mr. Horace Corder, a friend in London, in 1890, when blindfolded could press a visiting card to his temple, and with some difficulty perceive and read the inscription. When pressed by friends, he gave parlor demonstrations of his power occasionally, but was free to say that he had no explanation to account for it.

Sight changes with environment, and the history of ophthalmology shows how the eye responds to intelligent treatment. The judicious use of glasses in children has made squint and synechia less common, and the correction of eye-strain and abnormalities in the young has materially reduced the number of cataract operations in adults in the last twenty years.

Secondly, we note that it is a law of Nature that delayed evolution implies more complex and higher organism. The more helpless the animal at birth the higher its place later in the scale of organic evolution. The human offspring, the most helpless of all beings, becomes in adult life the prince of all creation. Likewise, the organ that is slow in its evolution is the more refined and perfected when completely developed. Apply this to the eye, which is very slow in its development, and note with what care Nature protects the retinal structures with its visual pigment.

From our analysis of the optical mechanism, we are able to understand how Nature develops the eyes of different animals for the respective demands of their being. Mammalians and fishes have poor eyes compared with carnivora and birds of prey. We note that the human eye, like that of the mammalian, does not get Nature's best care and post-natal protection, like that bestowed upon the eyes of dogs, cats, and birds. Nature jealously keeps their eyes closed for nine days, that the photographic retinal elements may be more perfectly developed for their purposes. The strengthening of any functioning member of a system, improves the whole of that system. Who does not know that to tone the heart contributes beneficially to the whole circulatory system; or that to correct defective teeth helps the whole digestive system. In like manner, may we

not believe that to promote the more complete evolution of the visual purple results in the functional strengthening of the whole optical apparatus?

In support of our observations, we note that poultry, including geese, ducks, and barn fowl, whose food is supplied them, are hatched with eyes open, but all birds which require acute vision to find their own food, like the crow, thrush, sparrow, *et al*, are blind for nine days after birth. You never see strabismus in an animal that had its sight occluded for a period after birth; for, with the better protection of the visual purple there is a corresponding strengthening of the refractive apparatus. That the eye is thus sealed for nine days, and tolerates no interference for its earlier opening, bespeaks a profound purpose. Any attempt to hurry the evolution is disastrous. We knew a dog whose eye had been forced open prematurely when he was a pup. Nature resented the insult, and gave him an eye with a red sclerotic, which remained a blemish through life. His red eye resulted, doubtless, from an effort of Nature to carry out her design, in perfecting the rods and cones and visual purple, by the exclusion of light. Now consider the difference between the sight of dogs, cats, and wild birds and that of cows, horses, and hogs, whose eyes are not shielded from strong light in the period after birth. As the eyes of calves, colts, and pigs are exposed to full light from birth what is the consequence? Those who have seen calves turned out from barns know that their vision is blurred, for they bump against posts, and run full pelt against stone walls. Horses also whose eyes have had the full glare of light from birth, see the rocks along the road-side so imperfectly that they are terrified, and consequently shy and run away, causing all kinds of disaster. Likewise, it is proverbially known that a hog's perspective is so inadequate that he can never run straight between the legs of a bow-legged man without throwing him over! This poor animal has no better vision than 5-20, and, as a distinguished colleague remarked, when being driven through a gate he invariably looks at one post and then at the other, and, as that specialist said, distrusting the sufficiency of the entrance, he shakes his head, balks, turns around, and bolts, winning the reputation of being pig-headed, whereas a pair of glasses would have saved his character.

As man has a much longer life than the carnivora and birds, he ought to have a much finer eye. Though the demand for finer vision and

farther sight has become greater with recent inventions and modern warfare, and though the sense of sight is still undergoing development, no application of practical evolution has been undertaken.

Nature is a safe teacher, and a brief recapitulation will impress you how unmistakably Nature has suggested the basis of our treatment; for we have shown the inadequateness of human sight for modern demands, and have proved that Nature could not have foreseen man's modern requirements. We have illustrated how amenable vision is to improvement, and shown that delayed evolution works for the perfecting and refining of function. We have demonstrated how light impairs the visual purple, both temporarily and permanently, and have noted that Nature bestows the acutest sight only on animals that have had their eyes closed for a definite period after birth; therefore, in imitation of the processes of Nature, you are doubtless prepared to accept the application of practical evolution, for no half way measure meets the requirements. In an age of precision and progress an original idea, or new departure, is welcome; for modern practice disapproves the doubt that leads to apathy and the hesitation that breeds distrust. Since the technic proposed is not complicated, but rational and safe in experienced hands, we deem it un-

necessary to burden our thesis by adding statistics.

As already stated, the subject unavoidably entered the specialist's field, consequently it is from that territory that the treatment is directed, which, to be effectively carried out, requires that the doctor or specialist in charge at the time of birth, should have the assistance of a specially trained nurse, preferably of his own training, familiar with and intent on the details of the new procedure. At the moment of birth, when the eyes are invariably closed until the crying period is over, the nurse must hurriedly cleanse the eyes and face, do the primary toilet, and apply a temporary mask to the face before the eyes are once opened. When this is done, the child is immediately removed to the dark-room, for prophylactic disinfection of the eyes, under oblique illumination from overhead. Afterwards an impervious, opaque, antiseptic vinculum is applied, in the interest of practical evolution, absolutely to occlude the light from the eyes. It is expedient that this vinculum be secured and inspected expertly daily, perfectly to exclude the light for a period of full ten days after birth.

If we are a trifle ahead of the procession, we will sit down until the swiftest of the boys catch up.

CHRONIC NASAL DISEASE AS A FACTOR IN DISEASES OF THE LUNGS*

By S. A. KELLER, M. D.

SIoux FALLS, SOUTH DAKOTA

Through association over a period of eight years with a specialist in diseases of the lungs, I had the opportunity of making a nose and throat examination of all patients consulting for chest symptoms. From 100 case-histories taken at random I find that nasal pathology is recorded in 86. About 5 per cent of these were acute coryza symptoms, corresponding with acute conditions in the bronchi, etc. The remainder include turbinal hypertrophy, septal deflections, and accessory sinus disease, with but 2 cases noted as ozena.

My conviction that we do not sufficiently emphasize the important part played by disease of

the nose and throat in causing bronchial and pulmonary disease is the reason for this paper.

The predominance of varying degrees of nasal obstruction can leave no doubt that we have here a most important factor. When this reaches a degree causing mouth-breathing, preventing the proper moistening, warming, and filtering of the air before it reaches the lower respiratory tract, the sequence is obvious; but this is the exception, and one can simply theorize as to the necessity for a freer air-supply to the lungs, or an increased effort on the part of the lungs to force respiration through obstructed passages. This seems a logical explanation for the cases of bronchial asthma, which one sees accompanying this condition. An interesting condition is one in which we find poorly defined symptoms in the

*Presented at the 14th Semi-annual Session of the Sioux Valley Eye and Ear Academy, Sioux City, Iowa, January 20, 1920.

chest, consisting, perhaps, of occasional pains in one side and perhaps a small area of dullness, with an obstruction which may be only one-sided, and on the same side as the chest lesion, the condition in the chest clearing with removal of the obstruction.

In cases of chronic suppuration in the sinuses, the incidence of bronchial and pulmonary inflammation may be simply a logical extension of the disease, which has been allowed so to extend because some contributing factor has lowered the individual's resistance. In some of the cases of asthma accompanying nasal suppuration and with practically no chest findings, the only explanation is one of protein sensitization; on the other hand, obese patients with chronic bronchitis are always asthmatic.

The contribution of these diseases to pulmonary tuberculosis is, of course, only an indirect one, but it is one the importance of which I have become convinced, whether they act by establishing a preceding disease of the lower tract,

which creates a fertile soil, or simply lowering the general resistance.

We do not sufficiently emphasize to our patients that a normal nose and throat constitute one of the best preventives of diseases of the lower respiratory tract; and we have been lax in calling the attention of physicians who see chest cases to the importance of investigating the pathology in the nose and throat. With the exception of tuberculosis of the lungs, I am certain that the removal of pathological conditions of the upper tract is the most important part of the treatment, and, indeed, often suffices to cover the entire treatment of the case. In active pulmonary tuberculosis the problem is naturally different, but here, except in advanced stage cases, the correction of nose and throat defects is certainly a great aid in improving the patient's condition. Radical surgery is to be avoided as a rule, and ether anesthesia is absolutely contra-indicated.

THE THIRD ANNUAL MEETING *of* **Minneapolis Clinic Week**

will be held on

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MINNEAPOLIS CLINIC WEEK— APRIL 20-23

The Clinical Section of the Hennepin County Medical Society will soon send out its first letter announcing the third annual meeting of Clinic Week. The dates have been set for April 20th-23d. Although it is probable that the first working day will be on Tuesday, it is hoped that Monday evening will be given over to a "welcome" banquet, given yearly by the Hennepin County Society. Much the same methods will be pursued as those in use last year, except that the clinics will begin each morning and continue to a later hour in the afternoon, giving the operators and clinicians two hours more for their work. This will cut into the noon hour, but some arrangements will doubtless be made which will provide for the comfort of the visitors, so that they will not be too tired to attend all the clinics. Then, too, in place of the afternoon symposia, which were presented last year, the afternoon between four and six o'clock will be devoted to clinical demonstrations without set papers, and these demonstrations will be in the form of clinics which will be wholly ambulatory. There will also be demonstrations by lantern slides and moving pictures. To this may be added some other features not as yet worked out. At all events, the Executive Committee of the Clinical Section will do their utmost to repeat last year's success.

There may be some criticism as to the date for holding the clinics, but the Society, in discussing

it, decided that the number of men from the Northwest who will attend the American Medical Association meeting will not be sufficient to interfere with the attendance at the Minneapolis Clinics. Then, too, by the eighteenth of April all traces of the influenza epidemic will have cleared away, and the men who feel that they can spare two or three weeks may first attend the Minneapolis Clinics, and from here go directly to New Orleans by special train, either from Minneapolis or from Chicago. The question has been threshed out fully in committee work, and no date seemed better for the Clinic Week than the one that has been decided upon.

Mr. Klein, of THE JOURNAL-LANCET, has been re-appointed business manager to carry out the details and to attend to the publicity. The co-operation of the superintendents of hospitals with their respective staffs is assured, and an attractive program is promised.

It is wise to suggest at this point that reservations at hotels must be made early, and all who expect to attend the clinics will do well to make their reservations now, even if they have to be cancelled at a later date.

INFLEXIBLE RESTRICTIONS FOR QUARANTINE OF INFLUENZAL PNEUMONIA

Chicago, Cincinnati, and doubtless many other large cities, including Minneapolis and St. Paul, have been living up to ordinances that are, so far, better than any that have been passed before. Influenza-pneumonia now is classed as a highly communicable disease, and in Chicago and other cities public funerals have been prohibited, and only a certain number of people are permitted to enter the house where death occurred until the body has been hermetically sealed in a metallic casket and placed in a closed coffin. Even then the rooms of the house are either fumigated or cleansed, whichever method the Health Commissioner decides upon, and no flowers are permitted in the house before this has been done, and no flowers are permitted to go out of the house, or accompany the remains in case the body is to be shipped. All flowers are burned, so that they are not distributed to hospitals after an influenza-pneumonia funeral.

The situation in Minneapolis has been handled with the same great care, except that there has been no closing of public halls; and through the wisdom of the United States Public Health Service under Dr. Harrington's watchfulness, influ-

enza cases have decreased in number. In fact, he states that in the past twenty-six weeks but 93 persons out of 10,000 have had influenza, and of that number (93) only 8 have died. This keeps the death record at a low point comparatively speaking, which may be due in part to the fact that physicians have been so busy that they have been unable to report all their cases, but it is probable that now, as the wave is receding, they will have more time to report their cases. Another evidence of the subsidence of the epidemic is that the visiting nurses have a smaller number of calls than when the epidemic began. But this does not warrant any of us, lay or professional men, in withdrawing our support from the Commissioner of Health and from taking all possible measures to prevent the spread of the epidemic. It is possible, too, that there may be another wave in time, and it may be mild or serious. It is quite certain that there have been a number of relapsing cases, some of them due to the opening up of multiple foci of infection, the burning out of one spot and, later, the lighting up of another, or to some other kind of infection which invades the upper air passages,—nose, throat, and sinuses.

There has been an effort made to reduce the virulence of the pneumonic infection by the use of antigen, but not sufficient time has elapsed nor have a sufficient number of cases been experimented upon to determine the benefits of this treatment. Otherwise, the treatment of influenza-pneumonia is one of empiricism. Some patients do well on very little medicine, while others require huge doses of medicine; and the problems turning up from day to day are numerous and perplexing. Some people who are recovering and are looked upon as recuperating suddenly drop dead, evidently from some infection which involves the heart or some part of the arterial system. The cases that have relapsed mean, usually, a long, slow period of recovery, and the best method of dealing with them is prolonged rest, increase in food calories, and whatever tonic seems either palatable or unpalatable, according to the "inactivity" of the physician.

The new Health Commissioner, Dr. Harrington, and the new City Hospital physician, Dr. List, are men of experience, and their methods are those of the advanced men in medical organization work. They both will doubtless be confronted with more or less unenlightenment on the part of the lay boards, and doubtless they will be opposed by politicians in some of their methods. Neither of them, however, is bound

to stay in Minneapolis, and unless they are permitted to carry on their work in a scientific manner and as sound medical judgment dictates, we may lose either one or both of them. Consequently, it behooves the medical profession of Minneapolis to stand behind both of these men and to encourage them in their efforts to reorganize and rehabilitate the Department of Health and the City Hospital.

HOW WOULD YOU LIKE TO BE THE GOVERNOR?

Politics are seething, medical, municipal, state, and national, and each department of the game calls for the activity of good men. Our medical politics is mainly confined to the uprisings and antagonisms of the medical societies. That sort of politics is not in line with the ordinary politics of the politician. On the whole, it may be said to be constructive politics, although some may differ with the writer in this statement. When, however, it comes to municipal politics, the matter must be handled with the greatest care and after full discussion of the matters which are to be outlined as beneficial from a medical point of view. In the Minneapolis Public Welfare Board, which has control of the Department of Health and the City Hospitals, there may be or there may not be politics, but the suspicion is that politics does enter into the composition of every such board, either as a benefit to the community or as a hindrance to the advancement of public health. State politics, where it pertains to medicine, has been under the control of the typical politician, and the medical man does not get very far with his ideas, mainly because the people at large do not recognize the value of scientific medical politics.

The governor of the state of Minnesota must be a man of very liberal views, and he should have a cabinet made up of men who are authorities in their respective departments. But when the governor of the state comes to medical problems perhaps he is inclined to err on the other side,—that is, he still has the feeling that the politicians know more about medical problems than do the doctors. This has been true for decades, and it is about time that some change be made in the influence of the politician and his attitude toward medical problems. If this cannot be accomplished the doctors should keep out of politics, whether medical or otherwise. How to do that is a problem.

Recently a suggestion has been heralded in the

newspapers by Frank Day, editor of the *Fairmont Sentinel*, that Dr. W. J. Mayo be the Democratic nominee for governor of Minnesota. No one knows, of course, whether Dr. Mayo has ever been consulted in the matter or whether this is merely the outcome of Mr. Day's efforts to advance some prominent man, who is likely to attract not only state but national attention, and to this end he has suggested Dr. Mayo.

Medical men have occasionally occupied high political offices, and there is no reason why such should not be the case again. Of course, the mere suggestion of Dr. Mayo as a candidate will bring out much discussion, but doubtless this will all be good-natured. However, if no other Democrat can be found who is willing to accept the doubtful honor in running for the governorship, Dr. Mayo would not hesitate, because he has force of character and good judgment, and, if he thought it was his duty, he would certainly accept the honor. Of course, Dr. Mayo has many medical problems on his mind, and one might be justified in speculating as to whether he would care to assume a different sort of mental exercise, which would mean laborious work and the surrounding of himself by a competent advisory board. Whether he feels that he is called upon to make a sacrifice of this sort is a matter to which we shall look forward with a good deal of interest. He has been known as a great organizer, and if he could infuse the state of Minnesota with some of his organization ideas he would be doing the public a tremendous benefit. Naturally, his opponents will look upon Mr. Day's suggestion as a further advancement of the Mayo Clinic, but this certainly could not in any way be an advantage to the Clinic. If anything, it might be a great disadvantage; however, it would be interesting to see a medical man of capability at the head of the state government, and to know that he would emphasize the necessity of public health measures and would carefully select able boards that are component parts of the state government to advise him as to the proper course to pursue. He could, by his efforts, increase the efficiency of the State Board of Health, and the public health measures which are a part of the work of the University of Minnesota, without in any way detracting from the progress already made. At least it would seem probable that such a man would take both of these boards out of politics entirely, and make them strictly medical propositions, and the responsibility would be placed where it belongs, namely, on the man who controls such board.

National politics is quite as interesting to the average physician and layman as any state issue, and there has been much effort on the part of the people to urge again the necessity of a medical man in the President's cabinet. This, of course, is an old-time suggestion, and has been warmed over and brought up by many medical organizations; but so far the national politician has failed to see the necessity of it. If it comes, the man in the cabinet who has charge of public health matters will not only wield a tremendous influence, because he would be supported by the entire medical profession, but he will do more to help medical matters, both national and state, than has ever been done before.

It is early as yet to clear away the issues which surround the coming campaign, but from a national, state, and municipal point of view, it will be necessary in the near future to decide upon candidates; and to the outsider the issues and the politics of this year will be more interesting and will create more enthusiasm than any campaign this decade has witnessed.

THE AMERICAN COLLEGE OF PHYSICIANS

The American College of Physicians is now engaged in an active canvas for members of its own body and the American Congress on Internal Medicine. We wish these organizations great success, and we hope the fates will spare them the grievous mistakes made by the American College of Surgeons; and yet we cannot predict such immunity unless personal jealousies among internists is far less than personal jealousies among surgeons.

At least one serious and unaccountable blunder is manifest in the list of officers and councilors of the American College of Physicians. There are five officers, three of whom are residents of New York City, one of Brooklyn (very near New York City, if we mistake not), and one of Chicago. That is a 4 to 1 shot in officers as regards East and West. The councilors number 24, and are divided into five yearly classes, from 1919 to 1923. The 1920 class is composed of four men from New York City and one man from Brooklyn. The whole body of councilors is composed of men from the following states: 8 from New York; 4 from Pennsylvania; 2 from Kentucky; 2 from Colorado; 2 from Illinois; and 1 each from the District of Columbia, New Jer-

sey, Michigan, Virginia, Louisiana and California.

Our readers may be able to recall some states with internists quite worthy to have a place on this board, as they have the states of the entire Northwest to choose from.

REPORTS OF SOCIETIES

THE MINNESOTA ACADEMY OF MEDICINE

The January meeting of the Academy was held on January 14th, Dr. Sweetser presiding. Election of new members was postponed for another month. The rest of the evening was taken up with reports of cases and the presentation of specimens. Forty members and two visitors were in attendance.

ANKYLOSIS OF THE LOWER JAW, WITH CORRECTIVE TREATMENT

Dr. Ritchie reported several cases of ankylosis of the mandible, with corrective treatment, as shown by means of lantern-slides. Also in the same way, Dr. Wilcox illustrated a method of treating fractures of the tibia and fibula by extension. Both subjects, Dr. Ritchie's and Dr. Wilcox's, were fully discussed by Drs. Geist, Law, Colvin, Benjamin, and Farr.

COLLOID CARCINOMA FOLLOWING GASTRO-ENTEROSTOMY

Dr. Benjamin reported the case of a man, 56 years of age, on whom he did a gastro-enterostomy two years ago, removing an obstructive mass from the pylorus. For a time following the operation the patient improved, gaining in weight and enjoying a better appetite. A month ago a tumor was demonstrable over the site of the original trouble. The abdomen was again opened, and a colloid carcinoma as large as a man's fist was removed. (Specimen shown.)

UMBILICAL HERNIA; STONES IN GALL-BLADDER

Another case reported by Dr. Benjamin was that of a woman, 69 years of age, with umbilical hernia and gall-stones. Upon operation, the protruding tumor proved to be a mass of omentum. An elliptical incision, which later was closed by imbrication, was made use of. Through another incision (a modified Bevan), the gall-bladder was opened and a dozen or more stones removed, several of which were a cubic inch in size, and many were as large as marbles. (Specimens shown.)

GALL-STONES AND BLADDER-STONES

Dr. Little showed skiagraphs of gall-stones and bladder-stones, with full description of the cases. He also reported a peculiar condition found in connection with a case of appendicitis.

SARCOMA OF THE LOWER JAW

The following two cases were reported by Dr. Law: Three months ago a girl, 17 years old, noticed a swelling in the right lower maxilla. The growth enlarged rapidly until its removal a few days ago, when it had reached the size of a small orange. The tumor was uniformly hard and surrounded the jaw, lying between

the symphysis and angle. To say what it was, without first making a section, was found difficult. It might be a benign odontoma, suggested by its extreme hardness; it might be an epulis, one of the growths of low malignancy, and one which rarely metastasizes; it might be a dentigerous cyst; or it might be one of the sarcomata. Radiography threw very little light on the subject: it showed only loss of bone substance. As surgical interference depended on a definite diagnosis, a preliminary section was made. The tumor was found to be a sarcoma of the small round- and spindle-cell type. (Specimen shown.)

INTESTINAL OBSTRUCTION WITH EMPYEMA OF THE GALL-BLADDER

A second case reported by Dr. Law was that of a woman, 58 years of age, on whom a diagnosis of intestinal obstruction had been made. For two days she had vomited. There was complete obstipation for four days; abdomen, flaccid; and epigastrium, tense. A mass could be felt projecting from the edge of the liver, which proved to be an empyema of the gall-bladder. There was also complete obstruction of the duodenum from adhesions and from a portion of the great omentum, which lay over the bowel and was adherent to the cystic duct. These were released, and the gall-bladder was removed. Death followed in 36 hours, and was probably due to the toxemia incident to obstruction.

STONES IN THE KIDNEY AND BLADDER

The following three cases were reported by Dr. Abbott:

Case 1.—Skiagraph showing a ureteral catheter pointing to a stone in the right kidney. The case was presented because the violent colics of which the patient complained occurred exclusively on the left side, and in no case on the right side, where the stone was located.

Case 2.—Skiagraphs showing a large stone in the bladder, with a changed position of the stone corresponding with a changed position of the patient. The case was shown because a stone was not observed by the cystoscope. Cystoscopy was done, however, before the x-ray picture was taken. The stone probably could have been found had this part of the examination been made afterward, when it was known positively that a stone was in the bladder. It shows the importance of thoroughness in the use of the cystoscope.

Case 3.—Skiagraph of a man who has had stones in the bladder for two years. The stones were only accidentally found on making a general examination of his urinary tract. The urine was normal, without blood, pus, or albumin; and the patient had never had any pain in the bladder, nor dysuria. Once in a while, if the flow was delayed, he would give himself a few shakes—"shimmy" a little, as Dr. Abbott put it—and the urine flowed freely.

STONE IN BLADDER, COMPLICATED BY ANOTHER IN THE PROSTATIC URETHRA

Dr. Owre called attention to the following case: A man, 38 years of age, was admitted to the Minneapolis City Hospital with retention of urine, thought to be due to urethral stricture. He had had dribbling of urine for several years; with attacks of acute retention. A silk-web catheter met with obstruction in the prostatic urethra, and some foreign body could be felt with it. If the catheter was held firmly against the obstructing body, the patient was enabled to empty the bladder.

Rectal palpation disclosed a large stone, about the size of a pecan, in the prostatic urethra, which could be moved, but it was not possible to push it back into the bladder. Still another stone could be palpated in the bladder.

This one was as large as a goose egg, and, no doubt, kept the other from being pushed up. The two could easily be clicked together. The presence of a stone in the urethra made litholapaxy of the larger one in the bladder impossible. (Plates shown.)

LESION OF THE SPINAL CORD

Dr. Mann exhibited a tumor as large as a man's thumb, and gave with it the following history: A man, aged 50, anemic and cadaverous, unable to attend to business, and giving a negative family and personal history, came complaining of pain in his left hip, left lower lumbar region, and left leg. Many physicians had examined him, but none offered any relief. He continued to grow thinner and more cadaverous as the years went by. One physician thought possibly the man had a sacro-iliac joint disease, and fitted him with a Goldthwaite belt. This only made his pain worse. In 1917 he consulted a neurologist, who diagnosed neuritis. A little later his case was studied very carefully by two well-known orthopedists, who agreed that probably it was a neuritic sciatica, but who abandoned the idea a few days later, admitting themselves puzzled. Next, he was seen by another neurologist, who offered no opinion at all, but who advised the rest cure. How willingly the patient took to this treatment may be imagined, since he was having so much pain at that time that he was not able to lie down, and for a period of one year had not once been in bed.

During the year 1918 he went from one physician to another, as he had been doing the year before. He had his spinal fluid examined and also his blood, but always with negative findings. Under the impression that it might be a neuritis, search was made for a source of focal infection. His teeth were extracted, and his tonsils removed. X-rays of the spine, of the colon, of the gall-bladder, of the ureters and kidneys, and of the bladder were made, all to no purpose, except that nothing was revealed thereby. The pain during this time (always on the left side and in the same place) was so bad that the patient was not able to lie down and sleep. Only when sitting or standing was he able to find relief. Sedatives, other than morphine, had no effect, and for a period of six months he took from half a grain to one grain of the drug daily. When told that he had developed a drug habit, he declared he would break it; and he did, stopping its use altogether after eight days. Still other physicians saw him before he came to Dr. Mann, one of the last physicians venturing the opinion that some local condition in the spine was the cause of all his pain. At any rate, x-ray plates showed a slight enlargement of the twelfth dorsal spine with a thinning of the corresponding vertebral body. Dr. Mann suggested that the spinal cord be laid bare, and, if nothing definite revealed itself then, the dorsal nerve roots be cut. The operation was performed the following morning. The laminae were removed from the upper three lumbar and the lower three dorsal vertebrae. The dura seemed normal. It was opened. The cord felt harder and fuller than normal. At the level of the twelfth dorsal vertebral body there was gradually exposed in the pia a tumor larger than the lumbar enlargement of

the cord. It extended from near the top of the twelfth dorsal to the first lumbar body, $1\frac{3}{4}$ inches by $\frac{5}{8}$ inch by $\frac{3}{4}$ inch, actual measurement. It lay at the back of the cord with some of the dorsal nerve root bundles running over it and about it. Besides the peculiarity of the twelfth dorsal vertebra, there was also an anomaly of the cord. It was shorter than normal, and ended near the middle of the twelfth body, instead of at the bottom of the second or the top of the third lumbar, so that the upper portion of the tumor lay on the back of the conus at the lower part of the lumbar enlargement of the cord, and the lower portion lay in the cauda equina. The tumor shelled out with comparative ease on gentle, blunt dissection, and three small, dorsal nerve bundles were cut and left still attached loosely to the spinal cord. Microscopic examination should determine the definite relations of the tumor to the nerve bundles and to the cord. Evidently it had developed in the pia. The tumor is cylindrical in form, of grayish-mucoid color, and spotted with yellow flakes, which vary in size from a pin-head to a pea. The color has changed somewhat since being treated with formalin, so that it is more yellowish. A careful microscopic study of the tumor will be made. The patient felt improved the same day of operation, and shows further improvement after seven days.

At this meeting two names were proposed for membership: Dr. Angus W. Morrison, Minneapolis, endorsed by Drs. Cross, Roberts, and Abbott; and Dr. Harry B. Zimmerman, St. Paul, recommended by Drs. Daugherty, Rogers, and Leavitt.

F. E. LEAVITT, M.D.,

Secretary.

CORRESPONDENCE

GRADUATE WORK IN THE MAYO FOUNDATION

TO THE EDITOR:

I will thank you for information about the course of study in the Mayo Foundation of the University of Minnesota. How many are now working in the course, and do all of them receive financial assistance?

Respectfully,

Chicago, Feb. 20, 1920.

MEDIC.

ANSWER

The number of "scholars" and "fellows" now in the course is about 40. The "fellows" are teaching assistants, entered for a full three-years course leading to a degree. Such men get an annual allowance paid out of the endowment fund of the Foundation.

The Dean of the Medical School recently furnished the following list, giving the number of

fellows and scholars now in the course of the Mayo Foundation and from what schools:

Pennsylvania, 22 fellows; Minnesota, 16 fellows, 2 scholars; Rush, 11 fellows; Harvard, 8 fellows; Johns Hopkins, 6 fellows; George Washington, 3 fellows; Tulane, 3 fellows; Iowa, 3 fellows; Maryland, 4 fellows; Toronto, 3 fellows, 1 scholar; Columbia, 2 fellows; Creighton, 2 fellows, 1 scholar; Jefferson, 2 fellows; Northwestern, 3 fellows, 1 scholar; Vanderbilt, 3 fellows; Washington University, 3 fellows; Western Reserve, 2 fellows; Allahabad, 1 fellow; Cornell, 1 fellow; Leland Stanford, 1 fellow; McGill, 1 fellow; Marquette, 1 fellow; St. Louis, 2 fellows; Syracuse, 1 fellow; Alabama, 1 fellow; Dublin, 1 fellow; Illinois, 1 fellow; Indiana, 1 fellow; Kristiana, 1 fellow; Michigan, 6 fellows, 2 scholars; Southern California, 1 fellow; Yale, 1 fellow; Chicago College of Medicine and Surgery, 2 scholars; Flower Hospital and Medical School, 1 scholar; Georgetown, 1 scholar; Medico-Chirurgical, 1 scholar; Buffalo, 1 scholar; Queens University, 1 scholar; London Medical College, 1 scholar; Tennessee, 1 scholar; Medical College of Virginia, 2 fellows; Nebraska, 1 fellow; South Carolina, 1 fellow; Western of Ontario, 1 fellow; Emory, 1 scholar, and Ludvig Maxe, 1 fellow.

MISCELLANY

A VISION OF A GREAT CITY HOSPITAL

At a complimentary dinner, noted in our last issue, given by the staff of the Minneapolis City Hospital to the hospital's new superintendent, Dr. W. E. List, who came here from Cincinnati, some very plain truths were spoken by the man who will shape the hospital's future work and development. What Dr. List said applies not alone to the Minneapolis hospital situation, but to the like conditions existing in almost every city in the United States. These words mean that politics, in the staff and in governing boards over the staff, must adjourn.

A city hospital is not an eleemosynary institution whose doors are opened by the sufferance of any board, any staff, or any man. Every intelligent man knows what it is, and he knows that politics in its management is an intolerable pest.

We are glad to be able to publish Dr. List's wholesome words:

My only desire as the executive of your hospital is to make for you an up-to-date and efficient organization, an organization of which you can all be proud; and with this end in mind you must also take an active part and an active interest.

My survey to date teaches me that your institution is sadly lacking in co-ordination of efforts, that not only the physical properties have been neglected, but the nursing and medical departments have not received their full and just consideration. Every municipal hospital has several functions to perform—chief among

these are (1) the scientific medical care of the indigent sick; (2) nursing education; (3) medical education; and in these three groups you play the principal rôle. Now the question arises, have you performed your duties conscientiously? By this I mean, are you fulfilling the obligation that your position on the staff imposes? Are you giving the necessary time and attention to your work in this hospital? If your staff position demands daily visits, are you doing your duty by making these visits, or are you allowing the internes to do your work? The internes are with us chiefly to receive instruction from you, not to perform your duties.

With these facts in mind, I intend to call a meeting in the next few days of the chiefs of service, said chiefs to be my medical cabinet, as it were. An organization will be formulated, and in this manner I believe we can carry out our medical policies successfully. I have hopes of establishing separate departments of Mental and Nervous Diseases; of Eye, Ear, Nose, and Throat; a Pathologic Institute; an X-Ray Department; and a department of Dental Surgery. I believe these departments should be represented as the others, with a director or chief of staff in charge of each. The deplorable situation is the lack of dental work done in your hospital. No patient should leave without having a complete dental examination. Hygiene and prophylaxis should be a routine matter. In the classification of work, all fractured jaws should be assigned to the dental service. One dental interne should be assigned to the resident staff; and I prophecy that with a linking up of dispensary work, two dental internes would be necessary within a very short time.

I also intend enlarging the number of resident staff physicians so as to include two or three residents at Hopewell, with a full-time paid man in charge, who will also act as my assistant in this department; and he shall be called an assistant superintendent.

At Hopewell we must establish a laboratory and x-ray department with a full-time competent person in charge. A dietist must be in charge of the diets of patients. This must be done because at the present time Hopewell is not a hospital, nor an infirmary, nor a jail; it is just a feeble attempt at a tuberculosis sanatorium.

I intend having definite department heads for the administration, and to have house staff meetings at regular periods in order to correlate the work and have a satisfactory understanding as to authority and limit of confines of each division, so that all functions from an administrative point of view may be covered. We should also have a handicraft department where convalescent patients may go and do weaving, basket-making, sewing, knitting, etc. If the patient is unable to be moved, a social service worker should go to his bedside. The advantage of such work need not be described.

The pediatric division can expect almost ideal conditions in the New Lymanhurst, even going so far as to secure the services of a public-school teacher so that no pupil or patient will lose more time than necessary from his school days per year.

Now, I am to give you the greatest shock of all. Will you get behind me in an agitation for a new general hospital? Remember, you are looking forward for a period of ten years. By the time you arouse the public, secure legislation, draw up plans, let bids, then build, you will be very fortunate to have a hospital in

this time, especially when you figure the various kinds of delays on public work. You, as a medical profession, when visiting other cities that can boast of fine municipal hospitals, should not be ashamed to say you are from Minneapolis if you will have a hospital that you are capable of building. The civic patriotism of this fine city should be capitalized into building the finest municipal hospital in the United States.

Every administrative department and the Nurses' Home in your hospital is today inadequate. Where will you be ten years from now? Do you want to patch on to your already inadequate institution, or do you want a fine hospital in the suburbs? When a municipality contracts with the sick poor of a community to give them satisfactory hospitalization, it should stand by its contract and always keep pace with the growth of the city.

These are not idle dreams, for this city will be very sorry if it does not take my advice at once and think, and think hard about its hospital building program.

Now that you have heard a few of my ideas as to the needs of the staff and hospitalization, I again ask for your support and co-operation. I need you to help me put these necessary plans over the top.

NEWS ITEMS

Dr. A. J. Button has moved from Mobridge, S. D., to Backus, Minn.

Dr. B. W. LeShier has moved from Armour, S. D., to Los Angeles, Calif.

Dr. E. W. Johnson, of Bemidji, has been re-elected county physician of Beltrami County.

The American Board of Ophthalmic Examinations will meet in New Orleans on April 26th.

Dr. P. A. Lommen, a recent graduate of Rush, has joined the firm of Drs. Hegge & Hegge, of Austin.

The name of the "Minneapolis City Hospital" has been changed to the "Minneapolis General Hospital."

Dr. W. J. Mayo's party that has been visiting South America, is on its way home, if it has not already arrived.

Dr. Harry Morrell, of Litchfield, has accepted a commission with the British government to do medical work in Egypt.

Dr. E. W. Jones, of Mitchell, S. D., was appointed coroner, last month, for Davison County, to succeed the late Dr. Bower.

Dr. S. H. Olson, who practiced at Milaca and other points in Minnesota for a number of years, has moved to Colorado Springs, Colo.

Dr. R. R. Hogue, of Linton, N. D., has returned from New York City where he has been

for a couple of months, doing post-graduate work.

Dr. J. J. Ratcliff, of Aitkin, has returned from New Orleans, where he has been taking a post-graduate course in New Orleans Policlinic.

The Norwegian Lutheran Deaconess Hospital of Minneapolis has changed its name, for the sake of brevity, to "The Deaconess Hospital."

Dr. C. A. Butler, of Redfield, S. D., has purchased the practice of Dr. J. C. Blaker, of Lake Preston, S. D. Dr. Baker will retire from practice and reside in California.

Dr. C. J. Robertson, who has been practicing at Grove City for a few months, has accepted a commission to do military medical work, and will be stationed at Great Lakes, Ill.

St. Paul is claiming the lowest death-rate for 1919 of the fifty largest cities in the country. If this be true, that city's health department, now under Dr. B. F. Simon, deserves great credit.

Dr. W. K. Nickerson, of Long Lake, has an article in *The Journal of the American Medical Association* on the prevalence of the broad tapeworm in Minnesota. It occurs mainly in the Finnish people.

Dr. Thomas A. Lee, of Hibbing, died last month at the age of 38. Dr. Lee contracted an illness in army service from which he did not recover. He was school physician in Hibbing for seven years.

Physicians should understand that they cannot prescribe liquor lawfully unless they have a license from the internal revenue collector of their district. About one in forty of the Minnesota physicians are registered for this purpose.

The annual meeting of the Minneapolis Clinic Week will be held this year on April 18th to 23d. The active work of the Clinic will begin Tuesday morning, the 20th, but a banquet will be given by the Hennepin County Medical Society Monday evening (April 19).

Dr. Howard L. McKinstry died at Granite Falls last month at the age of 74. Dr. McKinstry was a graduate of the University of Pennsylvania School of Medicine (class of '69), and came to Minnesota in 1879, and practiced mainly at Zumbrota and Red Wing.

Dr. William Edwards, of Bowdle, S. D., died last month at the age of 70. Dr. Edwards was a graduate of Northwestern (class of '75), and had practiced many years in Bowdle, of which he was the first mayor. He was an ex-president of the South Dakota State Medical Association.

When Dr. Edwards located in Bowdle, in 1885, he often drove one hundred miles to see a patient.

The *Pioneer Press* of St. Paul recently gave extended space to an editorial favoring Dr. W. J. Mayo for governor of Minnesota. It would be interesting to see the list of "affirmations" the politicians will demand for their support, not one of which Dr. Mayo would make, even if he swore at the whole lot.

The double-barred red cross, the international symbol of the associations engaged in the fight against tuberculosis, will feature the design for the Christmas Seals of 1920. As the result of an agreement reached between the National Tuberculosis Association and the American Red Cross, the new seals will be issued by the Association without the Red Cross symbol. They will be of Christmas design, and will display prominently the double red cross. This decision, says the announcement, comes as the result of the tuberculosis work having reached the point where it is no longer dependent upon any other organizations for its prestige and financial backing, and can stand on its own strength and resources.

MICROSCOPE FOR SALE

Spencer three-lens microscope with 4 mm. and 16 mm. lenses and one eye-piece 8x, also set of 75 microscopic slides. Address W. H. Reighart, Minot, N. D.

FUR COAT FOR SALE

Man's unplucked seal coat, otter collar and cuffs. Size, 54 inch chest, 53 inches long. Coat and lining in good condition. Will sell for half cost of new coat. Address P. O. Box 364, Faribault, Minn.

ASSISTANT PHYSICIAN WANTED

As soon as possible, a married man as associate in general practice in a South Dakota town. Give age, school graduated from, experience, approximate salary acceptable, and when available. Address 324, care of this office.

TWIN CITY ASSOCIATION WANTED

A physician having a large surgical practice in a good town adjacent to the Twin Cities wants to become associated with a group of medical men or a surgeon in Minneapolis or St. Paul where he can have a larger field to develop his specialty. Can take most of his present practice with him. Address 326, care of this office.

HOSPITAL AND PRACTICE FOR SALE

Owing to the death of Dr. Wm. Edwards, Bowdle, S. D., his 6-room office building, well equipped, full basement, hot water heating plant, drugs, library, fine lot of surgical instruments also hospital and supplies are for sale, with a \$12,000 or more practice. The farmers in this large territory are rich. This is an excellent opportunity for a good man. Picture of office will be furnished on application. Office separate from hospital. Address Mrs. Ida M. Edwards, Bowdle, S. D.

X-RAY OPERATOR AND OFFICE GIRL WANTED

A Minneapolis physician desires an office girl who can do x-ray work and also use a typewriter, but she need not do shorthand work. Will pay good salary. Address 322, care of this office.

LOCUM TENENCY OR ASSISTANTSHIP WANTED

I desire a locum tenency or assistantship for the months of April, May, and June. Am 31 years of age, and married. Can give highest references. Address 325, care of this office.

DENTIST WANTED

To share a modern well-located office with a physician on a busy corner in best residence district of Minneapolis. Rent, very reasonable. Location, corner of Hennepin Ave. and 31st St. Tel. Kenwood 7065, or address Mrs. John Quam, 3047 Hennepin Ave., Minneapolis.

PHYSICIAN WANTED

A doctor is wanted in a good live town in one of the richest sections of Brown County, S. D. Farmers are all well-to-do; the nearest competition is 20 miles on the north, east, and west, and 12 miles on the south. The village drug store can be bought if wanted. For any information desired, address B. T. Dott, Stratford, S. D.

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ANASARCIN

No matter how efficient a thing is, it always proves a handicap if there exists the least doubt as to its safety. Digitalis is a very good example of this. Its therapeutic value is beyond question, but it has several drawbacks that accompany its use. It is often difficult to get a dependable preparation, and sometimes its cumulative action and effects lead to unpleasant symptoms. Some patients cannot take digitalis in sufficient dosage for a sufficient length of time to have it prove entirely beneficial. It has, in addition to its action and effect upon the heart, a certain amount of diuretic action, but this, again, is more or less uncertain; hence some physicians who use digitalis often do so with a fear or doubt, and prefer some other agent or combination of agents which will give the good effects of digitalis without any of its drawbacks.

The older school of physicians recognized the diuretic effects of squill, and some of them discovered that squill has an action somewhat similar to digitalis. On the other hand, they were prompt to realize that squill often irritated both stomach and kidneys and for that reason, its use never became popular. Laboratory research and experimentations resulted, however, in the discovery that there are several active principles in squill, some of which exert a marked deleterious action upon the body, while others are without any unpleasant or dangerous features. Two of the active principles of squill,—scillitoxin and scillipicridin,—strengthen the heart's action, prolong systole, and are without cumulative effects, as well as acting as marked diuretics. The combination, therefore, of these two active principles, together with oxydendron and sambucus, supplies to the physician a therapeutic agent which is most valuable and at the same time, entirely safe.

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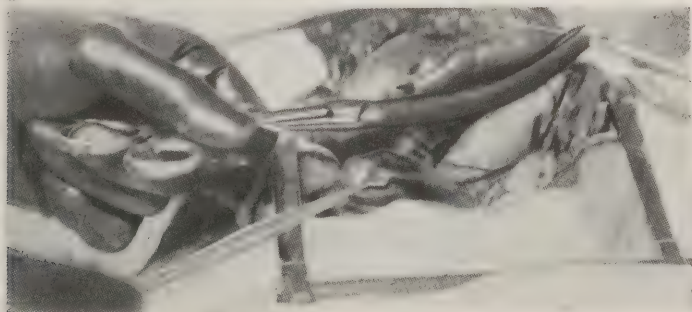
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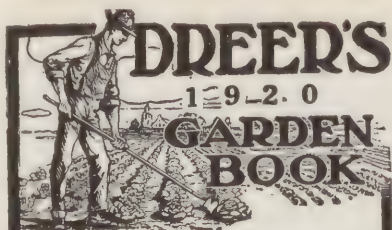
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POST-OPERATIVE INTRA-ABDOMINAL ADHESIONS—SOME CAUSES AND MEANS OF PREVENTION*

BY ARTHUR E. BENJAMIN, M. D.
MINNEAPOLIS

In discussing adhesions of the abdominal organs, I wish to consider those especially of a permanent and harmful nature, and to direct your attention to the fact that the adhesions are local signs of irritation, disease, or infection; for, as Hertzler says, "Our antipathy should be directed, not against the adhesions, but against those factors which produce them, be these infection or our own misguided efforts."

Why is it that a very simple laparotomy in an apparently clean case, is occasionally followed by distressing symptoms not previously complained of? Why is it that a subsequent operation is then necessary to correct the bad results of the first, namely, adhesions to the abdominal wall or to a portion of the abdominal viscera?

Dr. J. Frank Corbett, after a series of experiments, came to the conclusion that trauma, hematoma, and section of a nerve could cause adhesions, following abdominal surgery, but that infection is the most important etiological factor in these adhesions.

It is a well known fact that nature, as a protective measure, produces adhesions around an infected area within the abdomen. Why is it, then, that in performing laparatomies, surgeons often encounter a membrane which includes the ascending colon and cecum and which may fix the colon to the abdominal wall or so constrict the bowel that an obstruction is produced? What produces these adhesions, as well as others

around the sigmoid and the hepatic and splenic flexure? Why do they often re-form after they are separated? Are the adhesions due to infection resident in the colon or to infection carried through the blood-stream or fecal current from a focus above, or are they dependent upon an inhibition of the fecal current below the areas where these adhesions are found?

TEETH, TONSILS, AND SINUSES

There is sufficient proof now that oral sepsis is the cause of much gastro-intestinal distress, as Billings, Rosenow, Hartzel, Barker, Craig, Mayo, Ulrich, and many others have testified.

Gastric hyperacidity, gastro-enteritis, pylorospasm, and gastric and duodenal ulcer are the usual conditions found in cases with badly diseased teeth or tonsils, but appendicitis, cholecystitis, and colitis are possible sequelæ. If such is the case, it is not unreasonable to believe that in a patient who has suffered with enteritis or colitis for some time, a transmigration of infectious micro-organisms through the thinned-out bowel wall, will result in a protective peritonitis in the form of bands of adhesions at or above the points where stasis is likely to occur, namely, the cecum, ascending colon, or sigmoid. The system may take care of the infection normally resident in the bowel, but when the tissues are overwhelmed with the additional infection coming from foci of infection above, nature is spurred to further activity and produces numerous protecting bands or adhesions.

*Presented before the Minnesota Academy of Medicine, February 11, 1920.

For several years the writer has observed that a person with a "clean mouth" and a "good stomach" has less post-operative disturbances than one who has had oral sepsis and "a poor stomach." In order to insure a more perfect recovery, to lessen the gastro-intestinal disturbances following an operation, diseased teeth and tonsils should be removed, when possible, before a laparotomy is performed. When this plan is followed the patient has a smoother convalescence with less distention, less vomiting, and less pain. The subsequent health then improves more rapidly.

The wisdom of this plan I can subscribe to, because of the results in cases in which this procedure has been followed.

CASE

C. B., aged 28, male, weight 125, single. Family history good, with the exception of one sister whose death was caused by tuberculosis. Appetite fair, feels better for a short time after eating, and vomits considerably. He was operated upon sixteen years ago for appendicitis; no drainage, adhesions followed. Eight years ago he had a resection of six inches of the intestine. He has consulted many physicians; all deemed an operation necessary, the diagnosis of gastric ulcer usually being made. He has had a number of bad teeth, which were extracted several days before operation.

An operation was performed in October, 1919. A right rectus incision was made. It was impossible then to identify the visceral and parietal layers of the peritoneum on account of adhesions from the former operation, the bowel being fixed firmly at this point. The intestines were adherent throughout the abdomen and especially the ascending colon and cecum, which were bunched together and lay in the posterior portion of the abdomen. The colon was with great difficulty liberated and straightened out. The cecum particularly was very much dilated. All raw surfaces possible were thoroughly covered by a peritoneal or omental tissue. The bowel when properly straightened allowed the gas and contents to pass more freely. A considerable amount of sterile vaseline was used on raw surfaces and a drainage tube was put in to carry off the excessive exudate for a few days. The abdomen was closed by turning the peritoneum outward. Double chromic No. 1 for the muscle was used. The patient had some pain for a few days; his stomach was washed out to prevent distention. Mineral oil was resumed, it having been given several days in succession before the operation was performed.

This patient has gained in flesh, and seems to have little or no pain now. The bowels are becoming more regular, and the abdomen is less distended and softer, it being very rigid before the operation was performed. He does not have to resort to hypodermics, which were formerly used when the pain was severe.

PREPARATION OF THE PATIENT FOR A LAPAROTOMY

I believe we should, as far as possible, prevent any infection gaining entrance to the ali-

mentary canal. We should know the condition of the teeth and the gastro-intestinal tract; and the x-ray should be employed for this purpose. No food should be given to the patient for several days before the operation that is likely to cause any gastro-intestinal disturbance, a previous investigation having been made to determine what food the patient can easily take care of.

The use of strong cathartics preceding abdominal operations depletes and lowers the vitality of the patient, allows a greater distention of the intestines with gas, and often so irritates the mucosa as to aggravate an already existing colitis, increasing the number of infectious microorganisms and the possibility of adhesions therefrom.

The use of moderate doses of mineral oil at frequent intervals for several days preceding the operation, however, does rid the colon, in the simplest manner possible, of any harmful matter, and coats and soothes the mucosa in a way that makes the patient's convalescence much smoother. There seems to be less nausea, very little distention from gas, and less likelihood of post-operative ileus developing; therefore what deleterious substances are contained within the intestinal tract are not forced under tension into the blood-stream or into and through the bowel walls to the peritoneal covering.

MANNER OF OPERATING

There is no doubt in my mind that rough handling, traumatism from instruments, and irritation from gauze packs will produce adhesions in the presence of infection, which may be more or less permanent in character.

At the time when surgeons operated without gloves, the finger-nails, which could not be made surgically clean, would often wound the intestine or other abdominal tissue, to which point the omentum or contiguous loops of intestine would become attached.

The same thing occurs when the peritoneum is stripped from an intestine by the pulling or pressure of gauze.

To obviate this I have been using a rubber pack, which is sufficiently large to hold back the intestines in case an operation is to be performed upon the abdominal or pelvic organs. Since following this plan undue irritation of the serosa has been avoided with less chance for adhesions to occur.

The use of sharp, firm, self-retaining retractors too long applied may produce an ischemia of the

parts, which lowers the vitality of the tissues and favors the production of a low-grade peritonitis in the vicinity of the wound; and in case of direct contamination of the wounded tissues, a positive fixation of omentum to peritoneum will occur. Long, firm, continuous pressure, by retractors, therefore, should be avoided.

The use of iodine for sterilizing the skin, I believe, is a possible source of irritation and adhesions when the intestines are allowed to come in contact with the skin. The iodine should be removed with alcohol, and the skin protected with wet towels or rubber. Few or no chemicals should be used within the abdomen that would irritate the peritoneum.

SUTURES

Any suture line within the abdomen, especially in the presence of infection or when the suture is of the non-absorbable variety, is very liable to result in adhesions to the omentum or some contiguous organ.

In a series of experiments upon dogs, ten years ago, the writer found better results in gastro-intestinal surgery were obtained when the linen was used for the inner suture and the absorbable one for the outer layer.

The linen would soon, after serving its purpose, be cast off into the gastro-intestinal canal, leaving no irritating foreign substance to harbor infection and favor adhesions at that point, as would occur when such a suture was used as an outer one. The infection within the bowel usually reaches this outer line and the greater permanency of the suture keeps up the exudate, forming a very satisfactory culture medium. The linen would rarely become encysted, but required an indefinite time to find its way into the lumen of the intestine. Chromic and often plain catgut suffices in most all abdominal work for the outer sutures; the non-absorbable suture should not be used for the outer line for reasons above mentioned.

Knowing that suture lines may bring about adhesions, as few as possible should be used within the abdomen to accomplish the results; for instance, a retrodisplaced uterus can easily be corrected by fixing the round ligaments without the peritoneum.

CASE

L. T., female, a German farmer's wife, aged 32, thin, has one child.

She has had more or less stomach trouble for years, especially the last two years. She has had a stomach analysis which showed increased hydrochloric acid, with hemoglobin as low as 45 per cent, and in March, 1916,

it was 50 per cent. She vomits occasionally, she is thin, has lost considerable flesh, and is cachectic in appearance. Urine, normal; menstruation, normal as to amount and regularity.

An operation was performed at the Northwestern Hospital in March of 1916. An incision was made to the right of the right rectus extending upward and inward along the ribs and cutting some of the fibers of the right rectus. The appendix was enlarged at the outer third, and was removed. Some bands extended across the ascending colon, constricting it at about the middle third. They were curved. The pylorus was thickened and indurated and showed signs of a chronic ulcer, although the orifice was quite patulous. A posterior gastro-enterostomy was performed. Pagenstecher for the inner and chromic catgut for the outer sutures were used. A small drainage tube was extended down to the right angle of the anastomosis.

The patient did not get the best results from the operation until she at last had some bad teeth extracted in the latter part of 1917, then she improved very materially and has felt well ever since.

CASE

J. A. V., an American, aged 56, farmer, and married. Family history, good. Average weight, 140 pounds, reduced to 113 pounds in August, 1917.

Personal history: The patient has been in good health except for the last four years. Had indigestion beginning about four years ago, with eructations of gas and some nausea and vomiting of sour substance about three years ago. Felt better when the stomach was empty. Began to lose weight in 1915, and kept getting weaker. The bowels were constipated, and he had to use a laxative. Sleep has been poor because of gastric disturbances; tired very easily. Would have severe headaches, lasting about three days. Has had some sore throat. Teeth were in bad condition when first observed the last of August, 1917. The urine has been scanty; otherwise normal. First examination, on August 29, 1917, showed stomach prolapsed four inches below the umbilicus, dilated and obstruction at the pylorus on account of a mass in this area. Peristaltic waves were observed to pass over the stomach upon the ingestion of food. Colon greatly distended, and had colitis. Hemoglobin in 1917, 75 per cent, and blood pressure D-80, S-100.

Fluoroscopic examination of the colon and the stomach on August 30, 1917, showed loss of muscle tone of stomach, low in pelvis, unable to fill pylorus, colon prolapsed and dilated, and cap not well filled.

An operation was performed on September 1, 1917. A circular mass was found at the pylorus, obstructing this opening. The mass was about one and one-half inches in diameter and surrounding the pylorus. The colon was found greatly dilated and prolapsed. Other abdominal organs were in an apparently normal condition. A posterior gastro-enterostomy was performed, making a very large opening, as is my usual method, which obviates the necessity of closing the pylorus. Linen thread was used for the inner suture and chromic catgut for the outer.

The patient made an uneventful recovery, and gained in flesh and strength, but was advised to have his teeth removed and also to have a later operation for the removal of the growth.

He was seen again on March 16, 1918, when he had

gained some in flesh; his blood pressure had increased some, and the hemoglobin was about the same. He stated that he had been able to work considerably and was able to eat much better and digest his food. Very little soreness and gastric disturbances were complained of. The mass was present, however. He was advised then to get his teeth out at once and to report later. About six months after this visit he had his teeth removed, but did not make the progress which was expected. The mass in the region of the pylorus began to get larger and harder and more noticeable until the 27th of December, 1919, when he called at my office and we were able to demonstrate quite a large tumor, which was evidently an enlargement of the original mass in the abdomen. An x-ray at this time showed that his stomach emptied rapidly through the gastro-enterostomy opening. The pylorus was funnel-shaped, and I was unable to get the duodenal cap.

On December 30, 1919, I operated upon the patient at the Northwester Hospital, making a median incision extending from the ensiform cartilage through the old scar. The omentum was adherent to the anterior abdominal wall. This omentum was easily separated and the mass encountered, $4\frac{1}{2} \times 3 \times 2\frac{1}{2}$ inches, which included the pylorus and part of the duodenum and the pyloric end of the stomach. It was hard and firm, and the surrounding lymphatic glands were involved to some extent, especially along the pyloric portion, so that the pancreas was dragged up close to the pylorus. The gastro-enterostomy opening was found to be very satisfactory, with good firm union and looking smooth and glistening. No adhesions were found around the artificial opening. The mass was then carefully removed, preserving as much of the normal tissue as possible, tying off the blood-vessels with chromic No. 1, cauterizing the cut surface of the stomach, duodenum, and suspicious glands, not possible to remove, in this vicinity. A continuous inner mattress suture of linen was used on the remaining stump of the stomach. This line was then inverted with chromic No. 1, continuous. A few interrupted sutures were used to reinforce this second line. It was impossible to do a satisfactory inversion of the duodenal portion, which was stitched in like manner, except that a considerable amount of omentum was used for protective measures. The gall-bladder was dilated, and contained considerable bile. On account of the close proximity of the disease to the pancreas and the possibility of involving the duct, the gall-bladder was drained through the upper portion of the wound by a tube.

The pathological report of the tumor removed was "colloid carcinoma," which is an uncommon form, found near the ovary, breast, and stomach,—most frequently in the latter.

The patient has made a very satisfactory recovery, has gained in flesh, and is now able to do light work on the farm. His meals are frequent and in small quantities owing to the small gastric capacity.

RAW OR ABRADED AND INFECTED SURFACES

Abraded surfaces, by all means, should be covered by peritoneal folds, contiguous unimportant structures, or by omentum, as we all know that, when infection is present or a diseased tissue remains in the vicinity, adhesions are inevi-

table, unless so protected. The omentum or contiguous bowel may become fixed to such a point favoring kinks and ileus. The bowel then becomes distended, increasing the intra-abdominal pressure, which drives infection into other portions of the abdominal cavity, making the adhesions more extensive and permanent.

MEMBRANOUS PERICOLITIS

All surgeons of experience have observed a form of membranous pericolicitis other than the congenital form, involving a greater or lesser portion of the ascending, transverse, or descending colon, and not infrequently the sigmoid.

By a contraction of the fibers this membrane may twist the first portion of the colon outward, or firmly fix it to the transverse colon, producing a distinct kink at the hepatic flexure. It may result in such firm and distinct bands as to constrict the bowel and cause obstruction.

To allow these crippling bands to remain in a case where the abdomen is opened, is, to say the least, not fair to the patient, neither is it right to promise the patient that just because these bands are severed a cure will follow.

If we are right in our contentions that this membrane is due to colitis plus oral sepsis and stasis, then we must see to it that such infection is overcome; for example, diseased teeth or tonsils should have been previously removed, where possible, and a colitis properly treated. The writer has several such cases in mind, in which conditions, as above stated, were present and in which the line of procedure advocated brought satisfactory results. Other cases are under observation, and I hope at a future date to report more in detail my conclusions.

CASE

A. L. G., aged 43, American. Family history, good. Habits, good.

When he first came under my observation, in 1909, he had had a few mild attacks of what appeared to be appendicitis. He complained of pain in the region of the appendix. Pain would extend from this region during these attacks up towards the ribs, involving the whole right side. There was constant soreness in the region of the cecum and ascending colon. The colon was usually distended. In September, 1909, an operation was performed. A right perpendicular incision was made; a bulbous appendix extended down into the pelvis, and lay directly over the ureter. It was enlarged, thickened, and congested, with evidence of a rupture near the tip at some former time. It was removed. The omentum was adherent to the area where rupture had occurred. The gall-bladder was found large, but there were no stones. A number of adhesions existed along the right side and along the ascending colon. The constricting bands, which involved the colon, were sepa-

rated. Patient was some better for a time, but still complained of considerable pain off and on on the right side with much gas and distention of the abdomen.

As the patient had a colitis he was treated for such, with the hope that his symptoms would abate, but they became so severe that in 1912 a second operation was performed. The former incision was followed, it was extended higher up and curved below the ribs towards the sternum. The omentum was found adherent deep in the pelvis about the bladder, and the right colon was adherent in the pelvis. Bands of adhesions fixed it firmly to the abdominal wall on the right side. The transverse colon was also involved with adhesions, bringing the transverse colon down toward, and fastening it to, the middle of the ascending colon. The cecum and ascending colon were considerably enlarged, also the gall-bladder, where adhesions also existed. The liver was pulled down by these bands of adhesions. No stones were discovered in the gall-bladder.

The patient was considerable better for a while, but symptoms began to recur and became nearly as pronounced as they were preceding the second operation. He had nausea, vomiting and persistent distention, and tenderness in the abdomen along the whole right side. An *x*-ray at that time showed no disease of the stomach, but a portion of the duodenum was dilated and drawn well over to the right. There was some delay in the passing of the barium meal along the intestinal tract. The tenderness in the region of the gall-bladder and over the duodenum and hepatic flexure of the colon was quite marked. He was desirous of having something more done, but as his teeth, at that time, had begun to show evidences of decay, we advised him to have them attended to; but he did not have them extracted until after the third operation, which was performed in 1917, through the old incision. The omentum was found badly adherent to the anterior abdominal wall along the whole right side and also adherent to the ascending colon. The transverse colon was pulled down by a large fold of omentum and adherent to the cecum and abdominal wall, which made a distinct hepatic kink. No gall-stones and no ulcer existed. There were adhesions. The disabling bands were separated, and the raw surfaces turned in or covered with omentum.

The patient has now had all his teeth removed, can sleep and eat well, the bowels are regular, the tension, which was continually present before, is relieved, and the abdomen is now soft and normal.

COLITIS

I have seen few cases of colitis in which there has not been a dilatation of the colon, and such cases coming to operation have very frequently been accompanied by adhesions or a membranous pericolicitis, to a more or less degree, dependent upon the amount of dilatation and the character of the infection, the duration of the disease, and the impairment of the muscle fiber of the bowel.

By extending our investigations further, however, we frequently find a primary source of the colitis and adhesions to be due to ingested infec-

tious microorganisms from foci above and to stasis from a lack of abdominal muscle tone and obstruction from disease lower down.

Should there be an associated prolapse of the colon and stomach, as frequently is the case, the drainage of the alimentary canal is less perfect, and stasis with consequent greater local manifestations external to the canal is observed.

TUBERCULAR PERITONITIS

A not unusual cause of abdominal adhesions is a tubercular peritonitis, sometimes in the incipient stage, but not recognized at the time of the first operation for some other condition. In these cases where the primary source of the disease (usually tubes or appendix) is completely removed, recovery is almost certain, and adhesions will disappear.

CASE

M. S., aged 42, housewife, weighs 160 pounds, lost the vision of one eye when a child. Menstruation began at age of 13, regular. Has had two children with normal deliveries, but slight laceration. Had an attack of rheumatism, which lasted eight months, five years ago. An appendectomy was performed several years ago. Had gall-stone colic one year ago. Has coughed considerably, and has had severe headaches at times. Has considerable tremor in the right arm and hand. Has a moderate amount of ascites, which has persisted for about two months. The abdomen is distended, and the adnexa fixed in the pelvis. There is a great deal of tenderness over the ovaries and tubes. Temperature ranges between normal and 101°. The patient vomits at times, and has pronounced obstipation.

A diagnosis of possible tuberculous peritonitis or malignancy was made. She was operated on May 2, 1919, under gas and ether anesthesia, through a median incision below the umbilicus. The omentum and intestines were extensively adherent to the abdominal wall, it being necessary to go through the omentum to get at the pelvic organs. There were numerous adhesions of loops of small intestines throughout the abdomen, and one quart of serous fluid was removed from the abdomen. Both tubes were adherent, enlarged, and diseased, and evidently tuberculous. They were dissected out with considerable difficulty, and were thoroughly removed, including the horns of the uterus. The gall-bladder was normal, except some adhesions around this organ, with enlargement of the lymphatics.

The patient made an uneventful recovery and is now in good health.

CASE

Miss L. S., aged 18 years, a high school student.

Family history is good with one exception,—the father died of apoplexy at the age of 60.

She has had the usual diseases of childhood. Menstruation began at the age of 13, normal amount, considerable pain in the ovarian region, a great deal of backache, also in left side which extended up to shoulder. She is well nourished. Had an operation for appendicitis in 1915 by another surgeon, but was not well following the operation. Complained of a great

deal of pain in the region of the cecum and ascending colon. Was very nervous.

Examination showed a great deal of tenderness over the splenic and sigmoid flexures, and considerable tenderness over the cecum, and a retro-displaced uterus. Her leucocyte count was 7,200; hemoglobin, 80 per cent; there were a trace of albumin and a few casts in the urine. On account of the constant and severe pain in the abdomen an operation was performed in June, 1916. Pronounced adhesions were present at the site of the old scar. Two small parovarian cysts were present on the right side, and they were removed. The cecum was twisted outward to an angle of 45°, so that the ileum entered the colon at the outer side. The cecum was adherent to the abdominal scar. These adhesions were separated, and a moderate Lane's kink corrected. The transverse colon was very much shorter than usual. The descending colon was at least twice the normal length with dilatation at the middle third. The splenic flexure and upper and lower portion of the descending colon were reduced in size. Bands attached to the upper third of the descending colon pulled it down into the pelvis. These bands were separated, and the raw surfaces were covered. A modified Gillian operation was performed.

The patient made a very satisfactory recovery, and felt well until one year after operation. She had an attack of influenza about Christmas of 1918 with pleurisy, and coughed considerably for about six weeks. Her menstruation periods began to be more frequent, and more profuse and painful, sometimes lasting for ten or twelve days. She had frequent chilly sensations. An examination revealed the tubes and ovaries fixed with a possible small abscess to the left.

An operation was advised, and was performed on June 20, 1919, under gas and ether anesthesia. A medium incision was made along the line of the old scar. The omentum was found to be badly adherent to the abdominal wall back of the scar. The ascending colon was also adherent with some bands, which apparently did not constrict the colon or cecum. The gall-bladder was normal. The omentum was adherent in the pelvis to the two enlarged and infected fallopian tubes. There was a mass in the left tube about three inches by two and one-half inches, which contained a thick, creamy pus. The right tube was not as large as the left and contained a serosanguineous fluid. Both tubes were removed, including the portions extending into the horns of the uterus. Upon later examination they were found to be tuberculous. The ovaries were practically normal. The sigmoid was badly adherent to the tube on the left side. It was carefully separated, and the bleeding points ligated. The operation was carefully done with the least possible chance of spreading the pus, the left tube being removed first. A half-inch tube was passed into the pelvis, through which iodoform emulsion treatments were given.

The patient made a very satisfactory and perfect recovery, and is now feeling well, with no pain and discomfort, and has gained in flesh and is attending school.

APPENDICITIS, DISEASED TUBES, GALL-BLADDER AND OTHER INFECTIOUS AREAS

An appendiceal abscess or other infectious areas, when operated upon, should be so care-

fully handled that no pus is allowed to come in contact with tissue not already infected thereby. This can be done by making the diseased tissue easily accessible by an opening properly placed and sufficiently large. In this manner the abscess can be easily walled off, and the diseased parts removed.

I have always advocated drainage in all questionable cases for the reason that pus confined to the abdominal cavity will extravasate to points offering the least resistance, which means that the exudate, which is always present following operative trauma, may find its way between coils of intestines, thereby increasing the area of the infected field, and necessarily the number of adhesions following, for a time at least.

Free drainage is more readily secured by allowing gravity to assist in the effort; for instance, a case of abdominal or pelvic infection is best drained by turning the patient on his face, and where rubber tubing is used no difficulty is encountered, nor is it necessary to leave so large an opening for that purpose, all of which assists in avoiding the more extensive adhesions. This position does not allow the abdominal viscera to hang over the spinal ridge within the abdomen to produce intestinal kinks. When once the patient has learned to assume this position, far less discomfort is experienced because gas does not accumulate in the stomach or colon so readily, but passes on and is expelled.

There is less intra-abdominal tension and less possibility of infectious material escaping through the thinned out intestinal walls. The lessened intra-abdominal tension also minimizes the chances of spreading infection present within the abdomen at the site of the operation.

The permanency of such adhesions somewhat depends upon the nature of the infection, the parts affected, and the amount of traumatism produced at the time of the operation.

Where the drainage is not employed, in cases where much exudate will occur, post-operative ileus is more likely to follow on account of the greater amount of bowel tissue involved and the pressure of the exudate. The character of the drainage material somewhat determines the results, as well. A gauze dressing is more imperfect, is harder to remove, and wounds the peritoneal covering, often removing the serosa from the muscle beneath, and thus is left an area at which point adhesions are more likely to occur and remain permanent. I believe, therefore, that round and split rubber tubing and rubber dam

make the most suitable drainage material, because they do not adhere to the tissues and also the drainage is more perfect, it being not possible for the exudate to catch in the tubing and obstruct the exudate beneath, as with gauze.

Appendicitis, pus tubes, diverticulitis, gall-bladder disease, metritis, and cystitis (chronic) are usually accompanied by local peritonitis, the adhesions disappearing as soon as these protective barriers are no longer needed, but just so long as the tissues remain in an infected condition, so long will nature continue to provide the necessary protection.

We, therefore, must endeavor, when operating, to eliminate all tissues, the character of which will indefinitely harbor infection, or at least make it possible, by proper drainage or treatment, for the organs thus infected to rid themselves of the disease.

How often have we all operated on cases previously operated on, and found that a remnant of a diseased tube, that should have been thoroughly removed at the primary operation, was the cause of persistent adhesions and ill health?

Experience and good judgment are required to determine just what the procedure should be in each individual case, and it is by exercising good judgment that the patient is restored to health.

CLOSURE OF THE ABDOMEN

Why is it that most of the adhesions within the abdomen after an operation are usually found where the peritoneum has been sutured? By observing the work of others and profiting by my early surgical experiences I have converted what seemed to be a difficult task, in certain cases, into a very simple procedure. The case in which much trouble was experienced in closing the peritoneum was where a considerable distention of the abdomen was present, but since adopting the rule of always turning the peritoneum outward and closing it by a back-and-forth running suture (Murphy method) and, where the membrane is extremely thin, to include the fascia and always the posterior rectal sheath, we found that it is practically impossible for the omentum or intestine to crowd through, as there are no rents or gaps in the peritoneum. By this method very little of the suture line is exposed to pressure of intestines or omentum; and when this inner line is supported by a properly closed muscle and fascial layer little or no chance is offered for adhesions at this point.

CASE

Miss L. M., aged 20, farmer's daughter.

She was operated upon by a country practitioner for appendicitis. Following the operation the patient continued to vomit with no cessation for nearly a week, at which time the writer saw her. She was greatly distended and in a very weakened condition. She had very little rise of temperature, but the pulse was rapid, and there was evidence of an obstruction.

On account of her distended and weakened state, the operation was postponed, and the stomach washed at intervals of three to six hours for several days, until the abdomen became flat, the pulse stronger, and the patient in good condition to undergo an operation, which was performed about two weeks after the first operation. At that time a loop of small intestines was found wedged in between the edges of the peritoneum and adherent to the abdominal muscle. Evidently this bowel had escaped through the opening in the peritoneum or the closure was imperfect. The bowel was carefully separated, and the raw surfaces covered.

The patient made an uneventful recovery.

POST-OPERATIVE MANAGEMENT

The after-care of a case in which a laparotomy has been performed is very important, and too much stress cannot be laid upon the necessity of preventing an undue amount of intra-abdominal tension. We are perhaps right in saying that few laparotomies are performed in which no infectious microorganisms are either introduced or encountered in or about the tissues handled within the abdomen at the time of the operation.

Any great increase in the distention of the bowel or stomach makes a case with infection present infinitely worse; it is, therefore, imperative that a distended stomach be emptied by the stomach-tube and the colon by suitable enemas. A change of position, such as raising the foot of the bed, from side to side, and especially the face position, assists very materially in the normal passage of gas. It facilitates drainage, lessens the distention, and is a great relief, as many of my patients can testify. A pre-operative practice of this position is advised to get the patient accustomed to it. An abdomen distended for days after a laparotomy is bound to cause a spread of any local infection, and an agglutination of contiguous infected surfaces with more or less permanent adhesions. Should there be any undue amount of suture material exposed at the line of incision or a weak or suppurating wound in the presence of extreme distention, adhesions are the result at this point. As much movement as is consistent while lying down keeps up a better tone of the abdominal muscles, and prevents loops of bowel kinking and trapping gas.

The use of pituritin, when indicated, is to be advised; also mineral oil when the patient's stomach will tolerate it. The tone of the abdominal muscles should be restored as rapidly as possible. Certain exercises may be begun a few days after the laparotomy, and gradually increased. The diet must be carefully supervised in these cases until the bowels have regained their normal tone.

CONCLUSIONS

The cause and prevention of post-operative intra-abdominal adhesions may be summed up as follows:

Oral sepsis plays a most important part in the causation of intra-abdominal adhesions.

A preliminary period of preparation of a patient for a laparotomy should be adopted, where possible, to get the case in a favorable condition for operation, by eliminating primary foci of infection and to remove any disease that might interfere with a good recovery from the operation.

The x-ray should not be neglected as a means of diagnosing the condition of the teeth, as well as the size, position, mobility, and possible diseases of portions of the gastro-intestinal tract.

A laparotomy performed during which any attempt is made to correct adhesions of the abdominal viscera, may result in failure, unless the primary cause is remedied first.

A colitis must not be neglected, nor gastro-coloptosia in a case in which abdominal adhesions are present.

A bowel that is crippled and fixed in a faulty position by firm bands may have to be operated on to obtain the maximum results.

All raw surfaces should be thoroughly covered at the time of operation with unimportant contiguous structures, especially in cases where local infection or intra-intestinal sepsis exists.

All infected areas must be well drained, and all tissue that will indefinitely harbor infection must be completely excised in doing a laparotomy.

Work must be performed carefully, quickly, and with as little exposure of healthy tissue to infection, from within or without, as possible.

Care should be observed to avoid injuring the peritoneum by instruments, gauze, chemicals, and rough handling.

The peritoneum must be closed in such a way that gaps or rents cannot occur.

Intra-abdominal tension following a laparotomy should be near the minimum.

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SINUS DISEASE

BY WESLEY BISHOP, M.D.

MINNEAPOLIS

This is the open season for infections of the accessory sinuses of the nose, for the great majority of these infections are sequels to acute rhinitis, influenza, and pneumonia, which are very prevalent during the fall and winter months. The prevalence of sickness during this season of the year is, no doubt, influenced largely by atmospheric conditions. After the equable temperatures of summer the onset of winter is presaged by sudden variations in temperature. Given time enough, the body cells become inured to these changes, but at first there is a more or less marked susceptibility, varying with the individual, and during this period the body is easily chilled and the resisting power lowered, affording an opportunity for the ubiquitous germs to invade the system.

Sinus disease rarely occurs *per se*, but usually is the result of an extension of an infectious process originating in the nasal passage proper. In this discussion other etiological factors will be ignored.

Taking into consideration the anatomy of the nose and the sinuses accessory to it, and noting the number of conditions marked by an initial rhinitis, it is surprising, not that there are so many cases of sinus involvement, but rather that there are not more of them. It is doubtful if a so-called cold in the head is ever limited to the nasal passages proper. Each passage has four (frontal, ethmoid, sphenoid, and maxillary) sinuses tributary to or draining into it; and the mucous membrane lining this system of air-spaces forms a continuous covering of the whole.

In acute rhinitis clinical evidence suggests an involvement of this whole system of air-spaces rather than a localized portion. Even as the recovery from the infectious process is usually complete in the nasal mucosa, so, too, is it in that of the sinuses.

For a correct interpretation of sinus disease a knowledge of the pathology of acute rhinitis is helpful. Acute rhinitis (cold in the head) may be considered in three stages:

First stage: This stage is characterized by injection and congestion of the capillaries of the nasal mucosa, the resulting swelling causing obstruction of the nasal passages with consequent inability to breathe freely. In this stage the secretion is diminished, imparting a sense of dryness to the nose.

Second stage: In the second stage, the infiltration of the mucous membrane becomes more intense, and the secretion becomes more profuse, being at first serous, later becoming thick and mucid from excessive degeneration of the goblet and glandular epithelial cells, and rapidly changing it takes on a mucopurulent and purulent character; meanwhile the nasal passages are blocked by the tumefaction of the whole lining membrane, in particular that portion covering the turbinate bodies.

Third stage: This is the stage of resolution, characterized by a gradual reduction in the infiltration of the mucous membrane. The secretion lessens in amount and changes in character, becoming less and less purulent until it finally resumes its normal character and amount.

The duration of the attack from the initial stage until final resolution varies from five to ten days.

As previously stated, it seems probable that the mucous membrane lining the sinuses participates in the infectious process simultaneously with the nasal mucosa proper, with which it is continuous, and even as the recovery from the infection is complete in the nasal mucosa so too it is in the sinus mucosa.

It is during the third stage of the disease that the future sinus disease is determined. If during the infection no epithelial destruction has occurred to offer a locus minoris resistentiæ to pathogenic organisms, then the mucous membrane lining the sinuses returns to its normal condition; but, conversely, should the products of inflammation be pent up or should there have occurred during the course of the disease some dissolution of the delicate epithelial lining of the sinus, an opening for future pathology is established and, instead of a smooth recovery, evidence pointing to sinus involvement will present itself. It is to this evidence that we would direct your attention, for the early recognition of sinus disease is of the utmost importance. Recognized and properly treated 100 per cent of sinus disease can be cured; unrecognized or neglected until chronic pathology is established, a condition will pertain that may lead to prolonged suffering or even untimely demise in spite of the most skilled intervention.

The sinuses accessory to the nose are eight in number, four on each side of the head, each

set of four draining into a nasal passage. Some of these sinuses seem more prone to involvement than others. In our own experience the frontal, anterior ethmoid, maxillary, and sphenoid are involved most frequently in the order named. A reason for this apparent susceptibility of certain sinuses to infection is explained on studying the anatomy of the parts.

Each nasal passage is completely separated from its fellow by the septum nasi, and for practical purpose may be considered as a separate organ.

On examination of the interior of the nose we find the intranasal cavity subdivided into practically three spaces (superior, middle, and inferior meati) through the intervention of the turbinate bones, which spring, like shelves, from the external nasal wall. Each sinus communicates with the nasal passage proper by means of an opening (ostium), which permits drainage and ventilation, and incidentally affords a point of entry for infection spreading from the nasal passage. The position of this ostium and its anatomical environment largely decide the susceptibility of the individual sinus to invasion of pathogenic organisms.

The posterior ethmoid cells and the sphenoid sinus empty into the superior meatus *above* the middle turbinate body. The frontal, anterior ethmoid, and maxillary sinuses all drain into the middle meatus *under* the middle turbinate bone. The ostia of these latter sinuses are in relatively close relationship, and a circle three-fourths of an inch in diameter will usually include all three of them. Ballenger aptly calls them the vicious circle of the nose. The middle turbinate is the key to this vicious circle. The ostia of the sinuses are relatively small, and under normal conditions the free space under the turbinate is none too great for physiological functioning, and any departure from the normal, either anatomically or through pathology, may be sufficient to seriously interfere with the drainage from one or all of these sinuses. The mucous membrane covering the turbinate body is peculiarly sensitive to outside influences. Erectile in character it swells on the slightest provocation, thus enhancing the possibility of blocking these drainage outlets.

With these facts in mind it is to be expected that the sphenoid and posterior ethmoid cells, which empty into the superior meatus and which are not so easily blocked by swelling of adjacent tissue, should escape serious involvement more frequently than the others.

Symptoms.—The symptoms of sinus disease vary, depending on the intensity of the infectious process and the sinus involved. Certain manifestations point to sinus disease in general, while more specialized symptoms indicate the sinus involved. All the sinuses may be affected (pan-sinusitis) at the same time or, as is more frequent, one or two may be found diseased.

The disease may be considered as occurring in two types, as follows: the acute and the chronic, with symptoms characteristic of each.

Acute Sinusitis.—This form of the disease is the more liable to early recognition, as it is usually attended by sufficient localized symptoms to be appreciated by the patient.

Fever: Fever is usually present; during the course of an acute rhinitis fever rarely obtains after the third day, but, if a sinus becomes involved, the general malaise may persist. Possibly slight chilliness (rarely a definite rigor), particularly in the afternoon, may be noticed, and at this time a degree or two of fever will be noted.

Nasal discharge: Speaking generally, it may be said that an acute rhinitis that does not clear up within two weeks from its inception is complicated by sinus disease. A persistent nasal discharge, particularly if one-sided in character, should immediately call for an examination of the sinuses.

Although varying greatly, the discharge is at times quite characteristic, bright-yellow or greenish-yellow in color, almost thick enough to have form when expelled from the nose, in contradistinction to the glairy mucopurulent discharge of a resolving rhinitis.

In exceptional cases the discharge may be entirely absent or at least may be too insignificant in amount to be detected (closed sinusitis). In these cases the ostium of the sinus involved is completely closed, preventing drainage entirely.

Pain: Acute sinusitis is usually attended by pain more or less localized, being aggravated by pressure over the sinus involved. Obviously, this physical sign can be elicited only in cases of frontal or maxillary sinus disease, and possibly in some cases of involvement of the anterior ethmoid cells.

The character of the pain in sinus disease varies greatly. There may be a sense of fullness or discomfort, or a generalized headache, or, again, an excruciating neuralgia. Severe localized pain is more frequent in frontal and maxillary disease, possibly due to the proximity of

the supra-orbital and infra-orbital nerves to this region.

The pain accompanying frontal sinusitis may be peculiarly characteristic in that the patient notes that he has frontal headache in the morning, but that, after three or four hours, it disappears only to reappear the following morning. This peculiarity in the character of the pain is explained by the position of the ostium of the sinus. During the day, the patient being in the erect position, sufficient drainage occurs from the sinus to prevent pressure symptoms, but, on assuming the recumbent position at night, the ostium is no longer at the lowermost level of the sinus. The recumbent position favors venous congestion of the already inflamed mucous membrane. This conduces to closure of the ostium. The accumulating secretion, by pressure, augments this, blocking off drainage, the resulting pressure from pent up secretion aggravating the pain, but on the resumption of the erect position venous congestion is relieved, the swelling in the membrane decreases, and finally the secretion escapes through the once-more patent ostium, and the pain disappears.

In maxillary sinusitis we find that the pain is more constant in character, but is usually lessened when the patient assumes the recumbent position. The position of the ostium again explains this phenomenon; being situated at the top of the sinus better drainage facilities are afforded when the patient assumes the recumbent position, and, as a consequence, pressure is relieved, and alleviation of the pain results.

Swelling of the face over the cheek or in the region of the internal canthus and eyelids may be the first symptom to attract the attention of the observer, and is commonly falsely attributed to an ulcerating tooth.

Vertigo is not uncommonly noted in sinus disease, usually transient in character. The attacks are aggravated on the assumption of the stooping posture.

Anosmia: Loss of the sense of smell is a symptom frequently noted in disease of the ethmoid cells, due in part to blocking of the olfactory fissure by the inflammatory process and, possibly, to an accompanying peripheral neuritis of the olfactory nerves.

Chronic Sinusitis.—Chronic sinusitis is simply a continuation of the acute process. The products of inflammation are pent up through inadequate drainage, the already vitiated epithelium lining the cavity is constantly bathed in pus, and

the vicious circle is established. Various stages of pathology ranging from the simple chronic inflammation of the mucous membrane to actual necrosis of the bony wall, may occur.

The symptoms of chronic sinusitis are usually more obscure than those of the acute type of the disease, but are quite characteristic.

The subjective symptoms are often quite out of proportion to, and give no indication of, the extent or severity of the disease. They may be quite indefinite after an attack of influenza. Instead of a smooth recovery the patient may complain of general lassitude, ill defined pains and aches, perhaps headaches more or less periodic in character, slight transient attacks of dizziness, or inability to concentrate or make any prolonged mental effort.

Loss of memory is not uncommon. The very indefiniteness of the symptoms should lead to a suspicion of focal disease, and the sinuses be carefully examined.

Fever is usually absent except during acute exacerbations of the disease.

Pain: Ordinarily, pain is not a common symptom and may be conspicuous for its absence.

There may be more or less tenderness on pressure over the frontal and maxillary sinuses when these are involved.

Tenderness on pressure under the orbital arch at its inner angle is considered by many as pathognomic of frontal disease, but this sign must not be confounded with the tenderness caused by pressure on the supra-orbital nerve.

Headache: Headache is a very common accompaniment of sinus disease, yet it cannot be said to be characteristic enough to designate its origin. At times it may be sharply localized, more often quite generalized, dull aching or intensely neuralgic, frequently tending to periodicity. It should be emphasized, however, that headache of any nature not otherwise explicable, should call for an examination of the sinuses.

Nasal discharge: An increase of the nasal secretion may be said to be always present (closed sinusitis excepted). The character and the amount of the discharge vary greatly. It may be profuse, causing great individual discomfort, or it may be scanty and hardly noticeable, at times foul, more frequently without odor.

The discharge may escape anteriorly, calling for frequent use of the mouchoir, or posteriorly, revealing its presence only through the desire of the patient to clear the throat.

Colds in the head: Frequently occurring

attacks of acute rhinitis or so-called chronic rhinitis wherein the patient complains of never being entirely free from colds in the head, are frequently the dominating symptom of a sinusitis. This is particularly the case in disease of the ethmoid cells.

Ocular symptoms: These are not uncommon. The eyes may tire easily, or there may be occasional blurring of vision occasioned by close application to near work, as in sewing or reading.

These symptoms are due to a weakened power of accommodation.

Paralysis, partial or complete, of individual ocular muscles may occur, and actual depreciation of vision with central scotoma (retrobulbar neuritis) or even blindness from optic atrophy, may be a result of sphenoidal disease.

Anosmia: Loss of the sense of smell is quite common in ethmoid disease.

Cacosmia: This perversion of the sense of smell, in which the patient is tormented by the presence of a foul odor, is not uncommon, and is probably due to gas-formation from stagnant secretion undergoing decomposition.

Chronic pharyngitis and chronic laryngitis: These are frequently the result of sinusitis. The secretion pours down from the nose into the nasopharynx, thence down over the wall of the pharynx and larynx, causing the all-too familiar "hawking." The secretion accumulates on the vocal cords, irritating them by its presence, softening their epithelial covering, and causing more or less disturbance in the quality of the voice.

Catarrh: This word is generally used to designate chronic discharge, from the nose and throat in particular. It is possible that, in certain instances, the mucous membrane lining the nose may become the seat of chronic inflammation which manifests itself by increased secretion (for example, chronic rhinitis due to the presence of septal spurs or irregularities), but in the majority of cases so-called catarrh of the head is nothing more or less than the purulent secretion emanating from diseased sinuses.

Diagnosis: The diagnosis of sinus disease is confirmed by the objective examination which includes:

Direct inspection of the nasal cavities.

Transillumination of the sinuses.

Negative pressure.

Röntgenogram.

Exploratory surgery.

Although the symptomatology may point to

sinus disease it remains to determine the actual seat of the infection.

Direct inspection: Direct inspection usually reveals the presence of pus in one or the other of the nasal passages (exception, closed or hyperplastic sinusitis). The amount of purulent secretion varies from a minute seepage, difficult to detect, to frankly obvious discharge.

In the direct inspection of the nose, the middle turbinate body becomes an important landmark. The frontal, anterior ethmoid, and maxillary sinuses all drain under it, while the posterior ethmoids and sphenoid sinuses drain above it into the superior meatus. The location of the pus above or below the turbinate indicates its origin.

In classic cases with typical anatomy it may not be difficult to decide from which sinus pus is draining, but, usually, sinusitis occurs because typical, or what may be called normal, anatomy is absent; and on this account the determination of the sinus involved by direct inspection is at times far from easy.

A common example of this is a decrease from the normal in the space between the middle turbinate and the septum nasi. The turbinate is relatively too large for its confines, and, instead of an air-space existing between it and the septum, contact between their respective membranes occurs. This conduces to syphonage (through capillary attraction) of any pus accumulating under the turbinate, upwards into the superior meatus, thus simulating disease from the sinuses which empty in this vicinity. In this instance to guard against error it becomes necessary to wall off by packing first one meatus then the other, meanwhile watching for the appearance of pus to indicate its true origin.

The appearance of the middle turbinate is often suggestively altered in sinus disease, involving the frontal, ethmoid or maxillary sinuses. Its membrane will be found off color, sometimes quite boggy and sodden, indicating a condition of vascular stasis from chronic congestion.

Transillumination: Through the medium of transmitted light the cavities of the bones of the face can be flooded with light. In this manner the frontal and maxillary sinuses may be outlined more or less distinctly. In case either one of these sinuses is the seat of purulent secretion it remains dark, the rays of light failing to penetrate the inflamed mucosa.

Although by no means infallible (at times a clear outline of the sinus pertains in spite of the

presence of pus; again a dense bony wall may cut off the rays of light, causing a shadow simulating pathology that is not present), this method is a distinct aid to diagnosis.

Technic: The patient is placed in an absolutely dark room; then by means of a small lamp, properly protected, placed in the mouth, which is then closed, the bony cavities are illuminated. By means of a rheostat the intensity of the illumination is graded; and meanwhile by comparison the illumination of opposite sinuses is studied and differences noted.

Negative pressure: By means of a suction apparatus pus at times may be drawn from the infected sinus into the nasal passage.

Röntgenogram: The skiagraph offers a ready and, in most cases, an accurate method of studying the sinuses, particularly the frontal, anterior ethmoid, and maxillary. Owing to the more complex anatomy presented in the more deeply placed posterior ethmoids and sphenoids, extreme care is necessary in obtaining the skiagraph, so that the obscuration of the picture by confusion shadows may be minimized, and for the same reason the interpretation of the skiagraph requires more than a modicum of experience in *x*-ray work, as well as a complete knowledge of the anatomy of the parts.

X-ray findings should not be considered as infallible, for even, as with transillumination, a perfectly clear picture may obtain in the presence of demonstrable pathology.

Exploratory surgery: In the search for focal infection a sinus under suspicion should be explored with impunity. The benefit derived from the discovery of hidden pathology will surely offset the traumatism involved in the procedure.

Direct complications: Owing to the close anatomical relationship between the accessory sinuses and the eyes and brain, complications arising in these latter organs as a result of sinus disease, may occur by direct extension through continuity in the presence of dehiscences in the bony walls of the sinuses or through contiguity, the mucous membrane of the diseased sinus breaking down under the infective process with the formation of subperiosteal abscess and bone necrosis, the necrotic bone allowing the passage of pyogenic organisms, causing on the cerebral side an extradural abscess, which results in either meningitis, sinus thrombosis, or cerebral abscess. Occurring on the orbital side, phlegmon of the orbit results.

Extension of infection to the structures adja-

cent to the sinuses may also occur through the medium of the veins and lymph-channels, by metastasis, or along the sheaths of the nerves.

Orbital complications: In addition to the formation of orbital abscess, various ocular conditions may result from sinus disease, namely, muscular asthenopia, loss of the power of accommodation, paralysis of individual ocular muscles, disease of the retina and uveal tract, with disturbances of vision, central scotoma, or even atrophy of the optic nerve.

Facial erysipelas: Recurring attacks of facial erysipelas may often be traced to sinus infection.

Remote complications: The more remote complications of sinus disease are those attributed to focal disease,—nephritis, myocarditis, rheumatism, anemia, neuritis, etc.

Asthma: The almost constant association of sinus disease with this distressing syndrome, and the cures obtained through the elimination of the sinus disease, must be considered as more than coincidental. In our opinion reported failures to relieve asthma through the treatment of the sinuses argues not so much against the sinuses as a causal factor of the disease as against the thoroughness of the treatment directed against the sinuses.

The ethmoid cells, which are so commonly found diseased in conjunction with the asthmatic syndrome, are irregular in formation and indefinite in number; and in spite of careful surgery certain diseased areas may be overlooked, and failure to cure result.

Prophylactic treatment: The prevention of sinusitis is largely the prevention of rhinitis, and, failing this, its proper treatment.

The prevention of rhinitis depends, first, on the general condition of the individual, and, secondly, on the condition of his nasal apparatus. Granting that the former is good, the latter should be made to conform to the normal as closely as possible, all obstructions to perfect nasal ventilation removed and any abnormalities which by their presence tend to produce localized areas of congestion thus favoring changes in the mucosa rendering it less resistant to infection, should be eliminated.

Colds are so prevalent and usually seemingly of so trivial a nature so far as the individual discomfort is concerned that one is apt to neglect their treatment.

If during the attack of rhinitis proper measures are taken to forestall blocking of the open-

ings of the various sinuses, future trouble from these sources will be largely eliminated.

The treatment of sinusitis becomes in the main a question of proper drainage. Given this, the mucosa rapidly regains its normal condition. Treatment of the acute type of the disease differs from that of the chronic type only in degree. In the former the necessary drainage is usually afforded by reducing the inflammatory congestion causing the blocking of the ostia of the sinuses. In the latter, owing to the chronicity established, certain pathology has occurred in the mucosa, and its elimination becomes necessary.

Treatment of acute sinusitis: By means of topical applications of astringents the swelling in the mucosa surrounding the ostia is reduced, and drainage re-established.

Negative pressure by means of a suction apparatus is at this time of the greatest benefit, relieving congestion and favoring the flow of secretion from the sinuses into the nasal passage proper.

Should the application of astringents fail to establish efficient drainage, measures suitable to the individual sinus involved must be instituted. For example, in the case of the sphenoid the natural opening may be enlarged. Resection of the anterior third of the middle turbinate bone will relieve the frontal and ethmoid cells.

The maxillary antrum, owing to its large size and the extremely small size of its ostium, badly placed for drainage, will require irrigation. This may be accomplished through the natural opening or by means of an artificial opening in the nasal wall of the sinus. This is usually easily made by means of a trocar; through this opening the sinus may be thoroughly irrigated, and proper medication applied to its mucosa.

Treatment of chronic sinusitis: Treatment of this type of the disease is of necessity more radical. Owing to the established pathology, the application of astringents is not sufficient to establish drainage. The natural openings of the sinuses involved must be enlarged, and the diseased mucosa reached by medication, or, if this is impossible, it must be eliminated by proper surgery.

The prevalence of sinusitis is gradually being appreciated, and with an improved technic diagnosis has become more accurate and the results of treatment are steadily approaching the ideal.

It is to be hoped that just as the early recognition of suppuration of the middle ear has lessened the cases of mastoid complications, so, too, the early recognition of sinus disease will reduce the number of chronic cases, and cut down the percentage of complications which form its sequel.

THE THIRD ANNUAL MEETING of
Minneapolis Clinic Week
will be held on

April 20, 21, 22 and 23

With a Program even superior to those of the first two meetings

*Look out for further announcements in these columns and in letters from
 the Secretary, G. Elmer Strout, M. D.*

THE JOURNAL-LANCET

Represents the Medical Profession of
Minnesota, North Dakota, South Dakota and Montana
 The Official Journal of the
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MARCH 15, 1920

PROHIBITION SUBSTITUTES

It is stated in the public press from time to time (probably propaganda) that the people are beginning to feel restless regarding the stringent prohibition laws and are seeking pleasure and enjoyment by other diversions. It might not be wholly proper to say that crime had been the greatest substitution during the last year or so, but for some reason or other there has been a wave of crime over the entire country. It involves all types of criminal acts, from plain assault to the extremes of bestiality and murder. Conscience, so far as the public is concerned, seems to have been lost, but this is hardly an argument as a substitute for prohibition, as the average criminal is not a drinking man. He knows that he must keep all of his nerve in reserve and prevent himself from in any way losing his steadfastness and his cunning.

Another substitute is the attendance at moving-picture shows and theaters,—something that is amusing, not necessarily uplifting; something that has a tension in it, which might otherwise be known as a mental “kick.” People flock to the moving-picture shows in tremendous numbers, crowding, jolting, and jostling one another in order to see a more or less prominent “movie” actor, and, incidentally, to pass away an hour and a half of what might be a tedious evening. Many of these people could, by substitution, read something entertaining, restful, and helpful, but they prefer going from one palace of glare or darkness to another rather than to improve their mental status.

Another substitution is that of the excessive use of soft drinks, where people guzzle at soda fountains all sorts of concoctions, incidentally hoping that they may imbibe a little cocaine through Coca-Cola and other patented articles. Just why a man, and particularly a woman, will confound his or her stomach with the use of these sweet and indigestible so-called food substitutes is beyond explanation other than that it gratifies a longing, a want, and they hope it will tide them over until some friend offers them a drink of something more exhilarating.

Drugs are also used as a substitution for prohibition, and the consumption of aspirin and narcotics and other articles which are harmful seems to be in great favor with a certain class.

Influenza has played its part as a prohibition substitute, in spite of the fact that liquor was supposed to be an antidote, a preventive guaranteed to ward off influenza. This has been disproven time and again, but a good many of the people still think that if they had something alcoholic to drink they might be spared an attack of influenza, grip, or cold. In spite of this influenza has taken its toll and has caused a high percentage of the illness in the country; and, although it cannot be scientifically classed as a substitute for prohibition, it has occupied a large place in the community.

Slumming has resumed its popularity, and people who work during the day go to all sorts of places at night, invading doubtful and dubious quarters to gratify an appeal to their senses,—their indecent senses seems the only way to put it, really. Many a man and woman have tramped the streets and visited low dives and so-called resorts in order to get away from themselves. They simply get into the mire, and come out morally debased, as if they had been on an intoxication spree.

All of these things, of course, are outgrowths of the times, and indicate the restlessness of the race, and doubtless all will gradually drop into their proper pigeon-hole after the excitement of war, pestilence, and murder has subsided.

It is really highly amusing to note the number of people who are running private stills, rigging up some sort of an outfit in which yeast and raisins play an important part, the resulting beverage fermenting to such a high degree that it brings about a false intoxication, leaving the individual in the morning with as bad a headache as if he had been intemperate in his diet and had gorged himself with all sorts of food combinations.

In spite of all these substitutions for alcohol, the country seems to be prospering amazingly, and those who have entered into the spirit of prohibition are 100 per cent better off than they were before. The abolition of saloons and drinking-places has done wonders in its benefit to the working man, not only in the efficiency of his labor, but in his bank account. Eventually this condition will make itself a great necessity, that is, prohibition, particularly if it carries with it prohibition and temperance in other things as well as alcohol. It is rumored that people are eating more than they did, spending more on food at hotels, cafes, and restaurants. They can be just as intemperate in this sort of "intoxication," if they keep up this "gastro-intestinal" pace.

THE HENNEPIN COUNTY MEDICAL SOCIETY

The attendance at the last three meetings of the Hennepin County Medical Society, January, February, and March, has showed a very marked increase and decided interest in the proceedings of this Society. This is due to the fact, partly, that the programs have been much more carefully selected and have been of the interesting type, which appeal to the average medical man as well as to the specialist, and, next, that there was an anticipation and realization of a little difference of opinion in the Society as to some of its possibilities.

The Hennepin County Medical Society has a membership of 425, and is rated as the largest medical society between Chicago and San Francisco. Consequently, it is a power in the community from every point of view. The interest of medical men can be kept up if the officers of the Society are willing to give, as they have done for years, a great deal of attention to the individual meetings of committees, to the noon meetings (at which there is a luncheon and a brief talk by some man who is interested in some special line of work), and to the regular monthly meetings, which should be the happy meeting ground of the majority of the doctors in Hennepin County. It is a well-known fact that doctors frequently disagree and that at times they are quite scrappy; that they all, except the dead ones, enjoy a good fight, and, if the fight is a righteous one, it should draw a large audience. The medical profession, like the legal profession, meet together, argue vehemently, indulge in more or less personal abuse, and then, when the meeting is over, are as friendly as they ever were. This

sort of mental exercise is good for any organization, and the medical society that is composed of drones who come to sit and smoke and dream is a poor society. But a society which comes together with snap and bang, and accomplishes its purpose, is one well worthy of attending.

Out of this organization has grown the Minneapolis Clinic Week, which begins its third year of general clinics on Monday evening, the nineteenth of April, at which time the Hennepin County Medical Society will hold its annual banquet in which those of the profession who are here for the clinics will be invited to participate. The following day, April twentieth, the active clinics begin. From 8:30 A. M. to 3:00 P. M. medical, surgical, and special clinics will be given at selected hospitals, and every man in the Society who is a clinician, operator, or demonstrator will be given an opportunity to set forth his medical ideas, provided he has paid his annual fee of ten dollars to the Clinical Section of the Hennepin County Medical Society. It is planned to have the afternoons, from four to six o'clock, wholly clinical, that is, clinics may be given, lantern-slide demonstrations will be welcomed, and a film service will be employed to illustrate many topics in surgery and medicine.

As a concluding paragraph, we add that, following Minneapolis Clinic Week, the American Medical Association meets in New Orleans from the twenty-fifth to the thirtieth, thus giving the men ample time to attend the clinics in Minneapolis and proceed on their way to New Orleans. It is again suggested that reservations, both in hotels and on railroad trains, be made as early as possible, both in Minneapolis and New Orleans.

THE AMERICAN MEDICAL ASSOCIATION

The American Medical Association, which meets in New Orleans, from April twenty-sixth to April thirtieth, promises to be a wonderful meeting. The programs are already in the constructive stage, and many of them are completed. Then, too, the last week in April promises to be ideal in New Orleans, so that the tired medical man may leave his work, enjoy a day or two of travel, and further enjoy his visit to New Orleans, —a wonderfully interesting city, with its many surrounding attractions, both by land and water. It is possible that there will start from Minneapolis a special train which will go directly through for the benefit of the men of the North and West.

The scientific exhibit at New Orleans will be located on the third floor of the Hutchinson Building, the medical department of Tulane University, where ample space will be provided for exhibits, charts, diagrams, photographs, and placards.

The meeting ought to be a memorable one in that it is the first one to be held in New Orleans for many years, and it should attract a large crowd. It is to be hoped that more men from the Northwest will feel called upon to attend this meeting.

CORRESPONDENCE

MINNESOTA-GROWN DIGITALIS

During the past year or two, several articles have appeared in our columns on the subject of Minnesota-grown digitalis, setting forth its superiority; and only recently, as announced in our last issue, the American Medical Association has asked Dr. Morris, of the Medical School of the University, to standardize the Minnesota product.

Thinking the subject of unusual interest we have asked Mr. Upsher Smith, the pioneer grower of digitalis in Minnesota outside of the University, for information upon the subject. We give his answer herewith:

St. Paul, Minn., Feb. 20, 1920.

TO THE EDITOR:

I am glad to answer your inquiry regarding the activity of Minnesota digitalis, as compared with the ordinary commercial drug.

As you doubtless know, digitalis has been grown for several years by Prof. E. L. Newcomb in the medicinal plant garden of the College of Pharmacy, University of Minnesota. It has been proved to be an extremely potent drug, by physiological tests and by clinical experience in the University Hospital and other hospitals, as well as in the hands of many other physicians.

During the war large quantities of tincture of Minnesota digitalis were supplied to the U. S. War Department, and thousands of medical officers with the U. S. forces learned to depend upon its potency.

Of the many medical authorities who have proved the worth of Minnesota digitalis may be mentioned Dr. Henry A. Christian (*Amer. Jour. Med. Sciences*, May, 1919, p. 593), and Drs. J. H. Pratt and Hyman Morrison (*Journ. Amer. Med. Assoc.*, Nov. 22, 1919, p. 1606). The work of Drs. Morris Rowntree and Marx White on this subject is well known to your readers.

The question naturally comes from you as to why the Minnesota digitalis is of superior quality. In my opinion, this is partly a question of climate. The cool nights of August and the still cooler nights of September in Minnesota seem to be the decisive factor in stimulating the production of glucosides. This is shown

by Newcomb (*Proc. Minn. State Pharm. Assoc.*, 1919, p. 179), who tested physiologically the leaf grown in successive months, and found the greatest activity developed from the latter part of August on into early November.

The soil, naturally, plays an important part. *Digitalis* thrives best on soil containing iron and manganese, and these elements are found in the ash of Minnesota digitalis. In contrast, it is worthy of note that this drug does not appear to thrive in most parts of Switzerland, where iron and manganese are lacking in the soil.

For the successful cultivation of drug plants in the United States it is necessary that the product be better than the imported drug. A superficial comparison of our Minnesota digitalis with the average commercial powders gives at least one reason why the Minnesota product is superior. Its rich green color and full aroma testify to the careful and rapid drying of the Minnesota leaf and to the absence of dead leaves, dirt and foreign matter. The average commercial leaf, on the other hand, is yellowish brown in color, showing a lack of care in harvesting, and, when tested physiologically, is weaker in strength.

It costs more to produce a leaf of the Minnesota quality, for American labor is the most highly paid in the world. But no physician or patient would wish to economize in a drug like digitalis, which is used in relatively small amounts, and, when needed, should be as potent as possible.

The cultivation of digitalis calls for unceasing personal attention during nine or ten months in the year, from the time the seed is sown under glass in December until the last picking is harvested in October. It requires an extensive and expensive equipment for rapidly drying the leaves to avoid decomposition of the glucosides, and for cleaning, grinding, percolating and capsulating them. The industry is subject to all the risks and vicissitudes inseparable from an agricultural pursuit, and demands: (1) an unusual combination of cultural, pharmaceutical and laboratory skill; (2) an idealism and love of research that insists on continued improvement in the product; and (3) sufficient capital to carry the enterprise through.

The writer is doing his part in furnishing physicians with Minnesota digitalis of the highest quality, and he looks with confidence to the physicians of the Northwest to help make this industry a permanent and increasingly useful one, by specifying the products of his labor. With thanks for your inquiry,

Yours very truly,

F. A. UPSHER SMITH.

MISCELLANY

AN APPRECIATION OF MINNEAPOLIS CLINIC WEEK OF 1919

Shortly after last year's meeting of the Minneapolis Clinic Week, we published a number of letters from physicians who had attended the meeting; but one of the letters received was mislaid and was not published. It was from Dr. J. W. Andrews, of Mankato, who has probably

attended more local, state, and national medical meetings than any other man in Minnesota. Dr. Andrews' letter is both appreciative and discriminating. It is as follows:

Mankato, Minn., May 14, 1919.

JOURNAL-LANCET,

Minneapolis, Minn.

Gentlemen:

It is with pleasure that I express to you or through you to the medical profession of Minneapolis my hearty appreciation of the splendid clinics presented during Clinic Week, and I feel confident that what I personally express is the expression generally of the "out-of-town" physicians who attended.

We in the country have for several years past hoped that Minneapolis, the metropolitan city of the Northwest, with so many splendid hospitals and well qualified physicians, would furnish clinical facilities for postgraduate work, and our hope is now realized. Many of us have repeatedly gone to Chicago, New York, or Boston, when we can and ought to receive the same right here at home in Minneapolis.

Personally, I have attended clinics in several of the large European cities and in many of our own large cities and I do not hesitate to say that I have never anywhere attended better, more instructive, abler conducted clinics than I attended in Minneapolis last week. It might appear invidious were I to mention by name any of the instructors as being especially efficient and it would not be an easy task to show preference in a faculty of instructors all of whom are so able as those we listened to last week.

I have heard much talk among the visiting physicians about the clinics, but not one word of criticism, which is an evidence that all were pleased. It was often remarked that the clinics were practical and were not overshadowed by major operations staged for the purpose of exhibition of superior skill.

Let us express the hope that these clinics will become a permanent feature of the Minneapolis hospitals.

Respectfully,

J. W. ANDREWS.

PHYSICIANS LICENSED TO PRACTICE IN MINNESOTA

AT THE JUNE (1919) EXAMINATION

BY EXAMINATION

Behmler, Frederick W. U. of Minn., M.B., 1919
Bergheim, Martin C. U. of Minn., M.B., 1919
Carey, James B. U. of Minn., M.B., 1919
Crandall, Will G. U. of Minn., M.B., 1919
Crook, Rudolf L. U. of Minn., M.B., 1919
Daniel, Donald H. U. of Minn., M.B., 1919
Davis, Irl R. U. of Minn., M.B., 1919
Downing, Wendell L. U. of Minn., M.B., 1919
Dubbe, Frederick H. U. of Minn., M.B., 1919
Ehrenberg, Claude J. U. of Minn., M.B., 1919
Ericson, Swan U. of Minn., M.B., 1919
Fasbender, Herman A. U. of Minn., M.B., 1919
Flores, Otoniel Loyola U., 1919

French, Henry S. U. of Minn., M.B., 1919
Feaman, Albert C. U. of Minn., M.B., 1919
Gammel, John H. U. of Minn., M.B., 1919
Haas, Aloys T. U. of Minn., M.B., 1919
Halland, John G. U. of Minn., M.B., 1919
Haynes, Manley H. U. of Minn., M.B., 1919
Haynes, Stanley H. Rush, 1919

(4 year certificate)

Hedenstrom, Frank G. U. of Minn., M.B., 1919
Heimark, Julius J. U. of Minn., M.B., 1919
Herrmann, Sieg. F. U. of Minn., M.B., 1919
Hodapp, Robert J. U. of Minn., M.B., 1919
Hymes, Charles U. of Minn., M.B., 1919
Jones, Hugh T. U. of Minn., M.B., 1919
Karpman, Benjamin U. of Minn., M.B., 1919
Kennicott, Robert H. U. of Minn., M.B., 1919
Kinsella, Thomas J. U. of Minn., M.B., 1919
Lange, Alfred E. U. of Minn., M.B., 1919
Larson, Clarence M. U. of Minn., M.B., 1919
Lineer, Algot S. U. of Minn., M.B., 1919
Lippman, Hyman S. U. of Minn., M.B., 1919
Locken, Oscar E. U. of Minn., M.B., 1919
Mattson, Roger H. U. of Minn., M.B., 1919
Meysenbug, Ludo von. Harvard, 1917
Miller, Harry A. U. of Minn., M.B., 1919
Morrison, Harold E. U. of Minn., M.B., 1919
Morse, Russell W. U. of Minn., M.B., 1919
Murphy, Leo. T. U. of Minn., M.B., 1919
Nelson, Orville N. U. of Minn., M.B., 1919
Nerad, Anton H. U. of Minn., M.B., 1919
Norris, Edgar H. U. of Minn., M.B., 1919
Ott, Martin D. U. of Minn., M.B., 1919
Reinertsen, Bernhard R. Rush, 1919

(4 year certificate)

Richardson, Harold E. U. of Minn., M.B., 1919
Rigler, Leo. G. U. of Minn., M.B., 1919
St. Clair, Roy E. U. of Minn., M.B., 1919
Schulman, Leo. M. U. of Minn., M.B., 1919
Seibel, John J. U. of Minn., M.B., 1919
Silvernale, Faus P. U. of Minn., M.B., 1919
Shannon, William R. U. of Minn., M.B., 1919
Shedlov, A. U. of Minn., M.B., 1919
Smith, Adam M. U. of Minn., M.B., 1919
Smith, Arthur F. U. of Minn., M.B., 1919
Sprafka, Joseph M. U. of Minn., M.B., 1919
Stewart, Chester A. U. of Minn., M.B., 1919
Stewart, Rolla I. U. of Minn., M.B., 1919
Ternstrom, Oscar H. U. of Minn., M.B., 1919
Tiber, Leon J. U. of Minn., M.B., 1919
Veach, Oscar L. U. of Minn., M.B., 1919
Wyatt, Oswald S. U. of Minn., M.B., 1919
Young, Thomas O. U. of Minn., M.B., 1919
Barner, Henry A. U. of Minn., M.B., 1919
Johnson, Arthur C. U. of Minn., M.B., 1919

BY RECIPROCITY

Covell, Walter W. Barnes, 1906
 Dornblaser, Harry B. Johns Hopkins, 1914
 Dunn, George R. Johns Hopkins, 1914
 Flinni, Brainerd P. Rush, 1918
 Fuentes, Oscar J. Loyola U., 1916
 Geissinger, John De W. Northwestern, 1907
 Heim, Russell R. U. of Ill., 1910
 Kelling, Louis F. St. Louis Coll. P. & S., 1898
 Merriman, Lloyd L. Rush, 1919
 Muehlig, George F. U. of Mich., 1912
 Prangen, Avery D. U. of Mich., 1915
 Nixon, Charles E. U. of So. Cal., 1915
 Selle, Frederick S. Marquette, 1919
 Slater, Sidney A. U. Coll. of Med., Va., 1909
 Ward, Everett C. U. of Iowa, 1907
 Zeller, Ward C. Ohio Med. U., 1897

LICENSED UNDER THE LAWS OF 1919 PERTAINING
 TO PHYSICIANS HAVING SERVED IN OVER-
 SEAS SERVICE SIX MONTHS

Burns, Harry J. P. & S., Wis., 1903
 Maguire, Leo M. Creighton, 1912
 Montgomery, William F. U. of Ill., 1905
 Rathbun, Clarence A. Bennett, 1914
 Waldron, Carl W. U. of Toronto, 1911
 Webb, Roscoe C. Johns Hopkins, 1914

AT THE OCTOBER (1919) EXAMINATION

BY EXAMINATION

Andreassen, Einar C. U. of Minn., 1917
 Barden, Norman U. of Cincinnati, 1919
 Brix, Aage E. U. of Nebraska, 1917
 Constans, George M. U. of Minn., 1917
 Copenhagen, Nat H. Yale, 1917
 Everlof, John L. Jefferson, 1916
 Gausemel, Selmer D. U. of Minn., 1918
 Kennedy, William A. U. of Minn., 1918
 Pake, Sylvester G. Bellevue, 1898
 Tibbetts, Mark H. Johns Hopkins, 1917
 White, Paul A. Geo. Wash. U., 1916
 Wolfe, Edward I. Jefferson, 1917

BY RECIPROCITY

Allaben, Gerald R. Rush, 1913
 Almquist, Herman E. Loyola U., 1919
 Belote, Garnett B. U. of Louisville, 1913
 Branyan, Hugo Hah. Chicago, 1909
 Estrem, Theodore A. Rush, 1919
 Fritsche, William H. Marquette, 1919
 Fortin, William H. U. of Ill., 1908
 Gosin, Donne F. Northwestern, 1910
 Hansen, Elmer H. Tulane, 1918
 Houlton, Samuel S. U. of Maryland, 1897
 Lancaster, Blake McK. Trinity, 1904

Martin, John H. P. & S. Ill., 1893
 McClanahan, Thomas S. Northwestern, 1916
 Norris, Albina P. Hering, 1895
 O'Leary, Austin J. Rush, 1905
 Palm, Walter G. Chi. Coll. Med. & Sur., 1910
 Power, John E. Queens, 1917
 Robb, Edwin F. Wash. U. Mo., 1917
 Russ, John F. U. of Iowa, 1893
 Theige, Karl J. Rush, 1916
 Young, Samuel A. State U. of Iowa, 1896

LICENSED UNDER THE LAWS OF 1919 PERTAINING
 TO PHYSICIANS HAVING SERVED IN OVER-
 SEAS SERVICE SIX MONTHS

Arnold, James E. Rush, 1917
 Clark, William A. Harvard, 1911
 Dahl, Elmer O. Bennett, 1914
 De Tuncq, Adolph E. Marquette, 1913
 Doctor, William R. Marquette, 1915
 Dowswell, Walter J. P. & S. Wis., 1912
 Elias, Frank J. Marquette, 1914
 Gosin, Fabian J. Marquette, 1916
 Haraldson, O. Rush, 1912
 Hearn, William O. P. & S. Maryland, 1915
 Hoaglund, Arthur W. Illinois U., 1915
 Howard, Willard S. U. of Ill., 1914

AT THE OCTOBER (1919) EXAMINATION

Jerdee, Ingebrect C. Chi. Coll. M. & S., 1917
 King, Thomas A. U. of Iowa, 1905
 Lutz, Elmer H. Chi. Coll. M. & S., 1914
 McIntyre, John A. Harvard, 1916
 Melson, Oliver C. Western Reserve, 1916
 Neal, Joe M. Ohio State U., 1916
 Peterson, Alvin A. Northwestern, 1916
 Robertson, Carl J. Detroit Coll. M. & S., 1916
 Rock, John L. U. of Ill., 1915
 Sargeant, Harry W. Marquette, 1914
 Szlapka, Thaddeus L. U. of Pa., 1914
 Wynne, Herbert M. N. Johns Hopkins, 1914

AT THE JANUARY (1920) EXAMINATION

BY EXAMINATION

Agnew, Allen T. U. of Minn., 1917
 Coldren, Cassius M. Rush, 1919
 Hedblom, Carl A. Harvard, 1911
 Lowe, Thomas A. U. of Minn., 1918
 Sweetser, Theodore H. Columbia U., 1917

BY RECIPROCITY

Barfield, James I. Memphis Hosp. M. Coll., 1911
 Bowen, Robert L. Rush, 1914
 Conner, Harry M. Kansas Med. Coll., 1909
 Croson, Franklin R. Northwestern, 1918
 Folken, Frank G. U. of Nebraska, 1918

Lommen, Peter A.....Rush, 1919
 McAdory, Robert J.....U. City of N. Y., 1897
 McHaffie, Orval L.....Northwestern, 1918
 Rose, Milton E.....Rush, 1916
 Rystad, Olaf H....Chi. Coll. Med. & Surg., 1913
 Schmidt, Paul A.....U. of Oregon, 1915
 Smith, John F.....Johns Hopkins, 1915
 Stuart, Albert B.....U. of Nebraska, 1904
 Waters, Pearl S.....Pulte, 1910
 King, Walter E. .Detroit Coll. Med. & Surg., 1914

LICENSED UNDER THE LAWS OF 1919 PERTAINING
 TO PHYSICIANS HAVING SERVED IN OVER-
 SEAS SERVICE SIX MONTHS

Bedford, Edgar W.....Rush, 1914
 Bissell, Wayne W.....Rush, 1911
 Buie, Louis A.....U. of Maryland, 1915
 Derdiger, Louis B.....P. & S. Ill., 1910
 Ghering, Roscoe L....P. & S. Los Angeles, 1917
 Hughes, Louis D.....St. Louis U. Mo., 1909
 King, Clapham P.....U. of Pa., 1912
 Lillie, Walter I.....U. of Mich., 1915
 Luehrs, Leslie E.....Rush, 1915
 McLean, NeilHamline, 1906
 Myers, Harry A.....U. of Ill., 1913
 Odegaard, B.Chi. Coll. Med. & Surg., 1916
 Tiedemann, Ian D.....U. of Ill., 1916
 Vinson, Porter P.....U. of Maryland, 1914
 Wilder, Russell M.....Rush, 1912
 Zimmerman, Goldie E.....U. of Ill., 1911

MEDICAL ENGLISH IN A COUNTRY
 NEWSPAPER

A Minnesota country newspaper, under a February, 1920, date (perhaps we should add A. D. to the year) thus tells how the "spring fever" "evaded" our town in February:

Dr. ———, of ———, who is the Village Health doctor, was called here Friday, to examine and pass his opinion regarding the flu condition that has evaded our town, and reported thirty-eight cases, which has caused the Local Health board to place special restriction on public places to try and keep it from spreading to prevent the closing of school. Most of the cases are of a very light form, and resemble the LaGripa, or spring fever.

NEWS ITEMS

Dr. L. A. Fritsche, of New Ulm, is a candidate for mayor of that city.

Dr. C. W. Woodruff, of Chatfield, has sold his practice and will retire.

Dr. C. H. Wagner, an old-time physician, long

retired, died in Minneapolis on March 1 at the age of 67.

Dr. Frank E. Fletcher, of Ashland, Wis., died last month at the age of 77.

The Duluth Free Clinic is to be placed on a permanent basis, with an increased medical staff.

Dr. Charles J. McGuire, of Altura, died last month at the age of 41. Dr. McGuire had done overseas work.

The Cass County (N. D.) Medical Society held a clinical meeting last month in St. John's Hospital in Fargo.

Dr. J. A. Schultz, of Albert Lea, is taking a postgraduate course in eye, ear, nose, and throat work in Chicago.

A survey of the school children of Virginia, a mining town of Minnesota, revealed defective teeth in 400 pupils.

The American Medical Editor's Association will hold its fifty-first annual meeting in New Orleans April 26 and 27.

Dr. A. F. Panek, who has been doing substitute work for Dr. P. E. Shorrt at Adams, N. D., has located at Milton, N. D.

Prohibition has resulted in a scarcity of cadavers in medical colleges, and progress in medicine may be retarded. What is the remedy?

Dr. Walter Fitzsimmons, of St. Paul, died last week at the age of 63. Dr. Fitzsimmons was a graduate of the Minnesota Hospital College, class of '83.

Reporting contagious diseases to health officers seems to be unpopular, and fining the non-reporters is rare. One was recently fined in Duluth.

Dr. Willard S. Howard, of St. Paul, was married last month to Miss Edna Alice Bole, also of St. Paul. Dr. Howard will practice at Dawson.

Dr. H. G. Kessler, formerly superintendent of the Otter Tail County Tuberculosis Sanatorium, now occupies a like position in the State Sanatorium at Crookston.

Minnesota and Dakota physicians have been recuperating in the South and at the Pacific Coast in unusual numbers this year, the Twin Cities having a score or more physicians absent.

Dr. Robert Guilmette, of Minneapolis, is in charge of the practice of Dr. A. J. Clay, of Bowdon, N. D. Dr. Clay is visiting the clinics of the Twin Cities and Rochester, and may go east.

Dr. Margaret Caldwell, of Waukesha, Wis., entertained the physicians and their wives of that city one day last month to celebrate her 75th birthday. She still continues in active practice.

Dr. Leonard F. Schmauss, of Alexandria, Ind., formerly of Mankato, Minn., was killed in a railroad accident last week. Dr. Schmauss was 53 years of age. He was a graduate of Rush, class of '97.

Dr. C. K. Cole, who was a pioneer physician in Montana, died on Feb. 28 in Pasadena, Calif., at the age of 68. Dr. Cole was a member of the territorial assembly in 1888, and practiced in Helena until recently.

Two women physicians were elected to membership in the American College of Physicians, at its Chicago meeting last month, Dr. Anna Weld, of Rockford, Ill., and Prof. Leila Andrews, of the University of Oklahoma.

Dr. G. M. Williamson, of Grand Forks, N. D.; Dr. H. E. French, of University, N. D.; and Dr. A. M. Eastman, of Minneapolis, were in Chicago last week attending the Annual Congress for Medical Education and Licensure.

The Minnesota Public Health Association wants a building on the State Fair grounds for an annual exhibit. If the State favors the enterprise it should control the exhibit, and should show what the State itself is doing.

Dr. R. M. Burlingame, of Watertown, S. D., has returned from New Orleans, where he has been doing postgraduate work in genito-urinary and rectal diseases at the New Orleans Polyclinic, to which diseases he will confine his practice.

Dr. H. M. Bracken, of the U. S. Public Health Service, has organized a staff of ten Minneapolis and St. Paul physicians to care for disabled war veterans in need of medical service. About sixty men are now cared for in Minneapolis hospitals.

Dr. John Sundwall, of the University of Minnesota was elected president of the new organization formed last week in Chicago known as the National Association of Colleges and University Health Officers. As its name implies, the body will deal with student health measures in colleges.

A Wadena physician who sold his practice at Menhaga (twenty-four and a half miles distant), and made a contract with the purchaser not to practice within twenty-five miles of Menhaga, has been enjoined by the court from practicing in the former place. That's the law, and it is also justice.

Dr. H. V. Hanson, of New London, has been forced to give up his practice temporarily by the after-results of being gassed while in overseas service. His brother, Dr. Harlow Hanson, an interne of the City and County Hospital of St. Paul, is in charge of Dr. Hanson's practice at New London.

The Hennepin County Medical Society, which is composed mainly of Minneapolis physicians, has a Clinical Section, with, hitherto, \$1.00 annual dues, which have now been increased to \$10. This is not because of the H. C. L. fad, but because the Clinic Week of April 20-23 is to be the best ever, and will cost something.

Dr. Walter E. List, the new superintendent of the Minneapolis City Hospital, is telling the citizens of Minneapolis, through talks and interviews, some wholesome things about their own city hospital, showing them how great its service is, and especially that the service rendered is as good as the man of wealth gets when he employs the best physician in the city and a high-priced private nurse. The change of name from "City" to "General" was made to remove the stigma of what is often thought of as the pauper's hospital, even though it takes pay patients.

It is reported in the newspapers that Dr. L. B. Baldwin, of the University Hospital (University of Minnesota) "will be named superintendent" of the Charles L. Miller Memorial Hospital of St. Paul. Dr. Baldwin has been superintendent of the Miller Hospital for some months, and has taken an active part in planning it. The new hospital will open about September 1, and will have a capacity of over 200 beds. It will, no doubt, be a beautiful and efficiently designed building, for its architect, Mr. Clarence H. Johnston, is a professional man of high artistic attainments.

"The Clinical Club of Minneapolis" is the name of a new medical organization, which is confined to the younger men of the profession. Its purpose is the study and discussion of the original work of its members, and the presentation of current literature, book reviews, etc. The Club was organized last month, when the following officers were elected: President, Dr. S. R. Maxeiner; vice-president, Dr. Clifford A. Boreen; secretary-treasurer, Dr. Floyd O. Woodward. At the March meeting papers were read as follows: "Thesis,—The Relation of the Islands of Langerhans to Diabetes," by Dr. Moses Barron; "Electrodiagraphy in Children," by Dr. Max Seham; "The Use of the X-Ray in Obstetrics," by Dr.

Warren Bell; "A Case of Methemoglobinuria," by Dr. William King; "A Case of Transposed Viscera," by Dr. F. O. Woodward.

Plans for the organization of the Hennepin County Tuberculosis Association were formed at the last regular monthly meeting of the Anti-Tuberculosis Committee of Minneapolis. The new association is to be the successor of the Anti-Tuberculosis Committee, which was organized in 1903 by the Associated Charities and which continued as a department of the Charities until the recent agreement reached by the two bodies to form an independent antituberculosis society. The articles of incorporation state that the purpose of the new association is to continue anti-tuberculosis educational work and to promote the general public health of Hennepin county in co-operation with public health officials and other volunteer health agencies.

Miss Corinne Odell, former reconstruction aide in two United States army hospitals, has been chosen to supervise the occupational therapy work introduced by the Hennepin County Anti-Tuberculosis Association into the Hopewell Hospital for the tuberculous in Minneapolis. She will teach basket-weaving, metal and bead work, clay-molding, and other simple handicrafts, under medical supervision, as a means of relieving the mental strain and worry of patients and hastening their recovery. This Association was also responsible for the installation of occupational therapy at the Glen Lake Tuberculosis Sanatorium, and its therapeutical value was so markedly demonstrated that the expense of the work was later taken over by Hennepin County.

The use of a clown is evidence that child psychology is being effectively utilized in teaching children of Minneapolis the rules of healthful living. "Hoo Hoo," a health clown, sponsored by the Anti-Tuberculosis Association and the Woman's Community Council, is scheduled to visit all public, private, and parochial schools, orphanages and children's hospital wards of Minneapolis and entertain the youngsters with jokes and antics that carry lessons of fresh air, wholesome food, periodical physical examinations, and other items of hygienic living. The health clown idea originated with the promoters of "Cho Cho," the national clown. The plan proved so successful that health workers of Minneapolis sought out and arranged for the training of a local talent clown.

MICROSCOPE FOR SALE

Spencer three-lens microscope with 4 mm. and 16 mm. lenses and one eye-piece 8x, also set of 75 microscopic slides. Address W. H. Rinehart, Minot, N. D.

MINNEAPOLIS SANITARIUM FOR SALE

The prettiest and best-paying sanitarium in the Northwest is offered for sale for the best of reasons. Telephone Hyland 0152 or call at the Sanitarium, corner Plymouth and Penn Aves., Minneapolis.

ASSISTANT PHYSICIAN WANTED

As soon as possible, a married man as associate in general practice in a South Dakota town. Give age, school graduated from, experience, approximate salary acceptable, and when available. Address 324, care of this office.

TWIN CITY ASSOCIATION WANTED

A physician having a large surgical practice in a good town adjacent to the Twin Cities wants to become associated with a group of medical men or a surgeon in Minneapolis or St. Paul where he can have a larger field to develop his specialty. Can take most of his present practice with him. Address 326, care of this office.

HOSPITAL AND PRACTICE FOR SALE

Owing to the death of Dr. Wm. Edwards, Bowdle, S. D., his 6-room office building, well equipped, full basement, hot water heating plant, drugs, library, fine lot of surgical instruments also hospital and supplies are for sale, with a \$12,000 or more practice. The farmers in this large territory are rich. This is an excellent opportunity for a good man. Picture of office will be furnished on application. Office separate from hospital. Address Mrs. Ida M. Edwards, Bowdle, S. D.

LOCUM TENENCY OR ASSISTANTSHIP WANTED

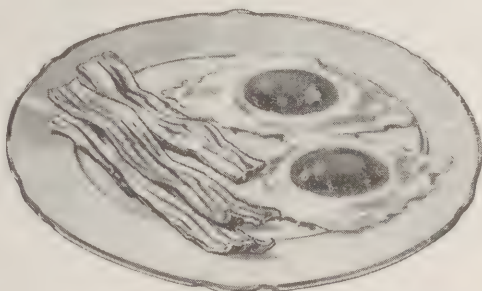
I desire a locum tenency or assistantship for the months of April, May, and June. Am 31 years of age, and married. Can give highest references. Address 325, care of this office.

WANTED, ASSOCIATION WITH EYE, EAR, NOSE, AND THROAT MAN IN MINNEAPOLIS

I desire to become associated as stated above either on a salary or in partnership. I have been in general practice in a good Minnesota town for ten years, and have had a postgraduate course of several weeks in eye, ear, nose, and throat work. Address 320, care of this office.

FOR SALE—IDEAL LOCATION FOR A HOSPITAL

This beautiful property, fully modern, containing 15 rooms with sleeping porches, large hall, fireplace, sun-room, two bathrooms, kitchen and laundry, hot-water heat, all facing St. Anthony Park with a frontage of 132 feet by 150 depth; fine lawns, orchard and garden, with chicken-house and double garage. Price only \$9,000. Phone Midway 6961 or apply, 2101 Como Ave. West, St. Paul.



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One Cent

is the cost of a big dish of Quaker Oats. Yet the oat is almost a complete food--nearly the ideal food. It is well-balanced, rich in minerals, and it yields 1810 calories per pound.

Saves 90 Per Cent

Quaker Oats costs $5\frac{1}{2}$ cents per 1000 calories. At present writing meats average about 45c, fish about 50c, and eggs about 70c.

So Quaker Oats, for the same calory value, costs about one-tenth the average cost of the foods we cite.

Do you not think that in these days such facts should be made known?

Quaker Oats

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It is sold everywhere, and is a dependable disinfectant.

LAVORIS

Lavoris is nothing new under the sun, nor is it an "exploited proprietary" driven into the mouths and down the throats of a credulous public by the force of intensive advertising. On the contrary, it is an elegant combination of drugs, with zinc chloride as its base, whose efficiency has long, if practically not "always," been recognized by physicians. In addition to this, its effects on mucous membrane are so prompt and marked that its use recommends it to the user and all his friends. The force of efficiency, not the force of advertising, has made Lavoris nationally known.

"THE FIRST NATIONAL BANK"

That cumbersome title, "The First & Security National Bank," has given way to "First National Bank," which means a saving of time to Minneapolis business men that will be welcomed.

The First is now a \$10,000,000 bank, with deposits so great that the small, or even the ordinary, business man thinks there is no place for his deposits or his business account in this bank. This is just the reverse of the truth. The First is a bank that extends its accommodations and its courtesies to every man doing business with it, and its division into many equal departments, makes every man feel at home, for he comes into personal touch with only one or two men.

We advise our readers to make the acquaintance of this bank.

ANGIER'S EMULSION

The group of winter diseases that now prevail in all parts of the country find their victims among the poorly nourished, who are not always, or even usually, the underfed, for no amount of food will nourish either old or young who cannot assimilate the food they eat.

For practically all such people a promoter of nutrition is indispensable, and such a promoter is Angier's Emulsion, demonstrated to be such by many years of use under the observation of the best physicians in the country.

The Angier Chemical Company, of Boston, are its manufacturers, and its success and dependability are attested by thousands upon thousands of men whose powers of scientific observation cannot be denied.

INVISIBLE BIFOCAL LENSES

Eye-strain may not be talked about so much today as when it was a fad in medical practice and medical literature; but it has not lost one iota of its importance

in medicine. It has, however, lost much of its bad effect because of the efficiency of the bifocal lens, which has grown rapidly in favor because this lens is now made invisible, and therefore is much more used.

The Riggs Optical Company, of Omaha, Neb., with branch offices in the six western cities, is giving the profession admirable service in the invisible bifocals, and, in fact, in all optical lines; and they seek the co-operation of medical men, who know the value of relief to the eyes.

They aspire to be known as the "House of Dependable Prescription Service," and they especially seek inquiries from physicians.

THE LABORATORY OF SURGICAL TECHNIQUE

The work done in the above-named Chicago school of applied technique under the management of Dr. E. A. Printy, is so excellent that one can hardly speak of it without danger of seeming exaggeration. A Minneapolis surgeon who is familiar with every step of the instruction given there and who has talked with a number of medical men who have taken the course, informs us that the work, within the lines undertaken, is well-nigh perfect. It is just such a course as is imperatively needed by men who are not specialists in surgery, but are yet doing much major surgery, together with all kinds of minor surgery.

The course is short, covering only seven days, but it is so intensive that the man prepared to profit by what he sees and does under experts, derives immense benefit from it.

The men conducting this laboratory are deserving of very great credit for the excellence of the work they are doing.

ALKALOL

The best defense against disease attack is found in maintaining a normal healthy condition, not only of the blood, but of the other organs and tissues of the body. The blood is the last great line of defense against bacterial attack. The first line of defense has been said to consist of the mucous membranes and, to a lesser extent, the skin. The normal secretion of the glands found in mucous membranes is held to be the best possible antiseptic solution to protect that membrane against irritation or inflammation. Unfortunately, however, the effect of such irritation is to overstimulate such glands, with the result that their secretion is increased in quantity but impaired in quality.

A common practice of using markedly alkaline solutions of so-called antiseptic nature, adds to the difficulty because hyperalkalinity overstimulates the glands and produces a catarrhal condition, and such glands mean overworked glands. Hence, it is better to employ an agent which will not overstimulate such cells, but, on the contrary, will feed them. This is done by Alkalol, which is an agent particularly useful in the treatment of mucous-membrane inflammation.

Alkalol is soothing, healing, and economical to use, whether employed as a spray, gargle, douche, irrigating fluid, injection, or wet dressing. The action of Alkalol is prompt and will be found efficient. A trial of this product will demonstrate its efficiency and a sample of it, together with interesting literature, will be sent to any physician on request to The Alkalol Company, Taunton, Mass.

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For Coughs and Colds

SEDATUSSIN—A non-narcotic, non-alcoholic, pleasant-tasting cough syrup. Commends itself to the patient; readily taken by children; meets the requirements of an all-round bronchial sedative. Write for tasting samples.

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RHEUMALGINE—A compound of strontium salicylate, hexamethylenamine and colchicine. Has proved very effective in acute articular and chronic rheumatism, muscular pains, lumbago, sciatica, migraine of the rheumatic, gout, etc. Rheumalgine can be prescribed in both liquid and tablet form, the former in twelve-ounce bottles and the latter in bottles of 100 tablets.

CHLOROXYL—A comparatively new product, has already attracted much attention because of its effectiveness as a uric acid eliminant, analgesic and antipyretic. It is phenylcinchoninic acid hydrochloride. Chloroxyl is exhibited in bottles of 100 and in tubes of 20 tablets of 5 grains each. Ask for literature.

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COCO-QUININE—In prescribing Coco-Quinine, Lilly, you know that you are writing for the original product and that your patient will get two grains of true, unchanged quinine sulphate in each average teaspoonful (96 minims). A child will take Coco-Quinine and lick the spoon.

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In furnaces the water-box should be regularly filled and a little Platt's Chlorides added to it.

Keep on or under your radiators or stoves a dish or bowl containing Platt's Chlorides, diluted one-half, and in the sick-room a towel moistened with this solution hung up and occasionally wafted about, will secure a constant moistening and purification of the air.

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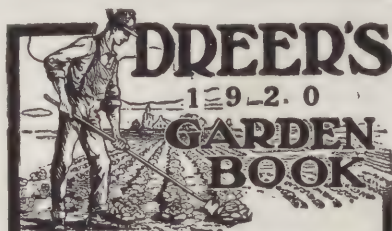
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FACTORS IN PROGNOSIS OF CHRONIC NEPHRITIS*

By JOHN GROSVENOR CROSS, M.S., M.D.

MINNEAPOLIS

There is no disease in which there are more factors to consider in prognosis than in chronic nephritis in its earlier stages. Whether or not chronic nephritis is more common than it used to be, it is certain that the stress of modern life tends to cause it, and especially the chronic interstitial type. Its victims are largely men in responsible business or professional positions, and women who have considerable care and worry. Because of the responsibilities of its sufferers it is the more necessary that the diagnosis, and prognosis, which may involve radical changes in mode of life, be as competent as is possible.

Chronic nephritis is very rarely found uncomplicated, unless the disease is accidentally discovered very early by the oculist or the examiner for life insurance. Cardiovascular changes may have made their appearance. Aside from other organic changes, functional disturbances are common. Resistance to infections is lessened by chronic nephritis, which, of course, cannot be predicted. There is no way one can foretell accurately what may happen to the heart or the blood-vessels. Even as to the occurrence of uremia, it has been abundantly proven that uremic states do not occur entirely as the result of retention of nitrogenous products in the blood, nor is uremia necessarily more common in cases with the greatest destruction of kidney tissue. For example, uremia may come on exceptionally when the patient's blood chemistry does not show any very alarming disturbance. We may have no uremia

with large polycystic kidneys in which there is almost no secreting tissue left. Under these circumstances the prognosis in chronic nephritis is always uncertain.

In any large series of cases there will be a number of deaths from extrarenal causes, largely from intercurrent infections.

The presence of albumin and casts in the urine is not sufficient ground on which to base a diagnosis, and much less a prognosis, of chronic nephritis. The amount of albumin and the number and quality of casts in the urine have practically no significance as to the type or the extent of the renal disease. It was in 1901 that Osler called attention to the fact that urinary findings were of less importance in determining the character of the disease than were some other signs. We know that at times chronic nephritis may exist without showing either albumin or casts in the urine at a single examination.

We have no classification of nephritis based upon the pathology of the kidneys that is entirely satisfactory to the clinician. The pathologist is equally free to say that whatever clinical classification we make of renal disease, he will probably find something at the autopsy to disprove it. Our chagrin at the autopsy reports of our clinical cases is somewhat lessened by the fact that, even in the most carefully observed cases, there is often a surprising lack of correspondence between the clinical findings, the mode of death, and the tissue changes found post mortem.

In practical work clinicians have found it con-

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venient at least to describe cases of nephritis with regard to the characteristic functional disturbances which predominate; therefore we speak of deficient salt or water excretion, nitrogenous elimination, and so on, thus expressing a more definite clinical concept than if we speak of granular kidney, arteriosclerotic kidney, chronic parenchymatous nephritis, etc.

As in other chronic affections, the desirability of as early a diagnosis as possible is obvious. The patient who presents himself with an albuminuria, with or without casts in his urine, with perfect kidney function, ability to concentrate his solids, and no symptoms whatever, should be differentiated sharply from the one who shows diminished kidney function. While, in the first instance, the patient should be kept under observation, there is probably no need for subjecting him to a greatly modified regimen as long as his conditions remain unchanged. However, without functional tests of the kidney, study of his history, and a complete physical examination that satisfies the clinician that there is no renal impairment, one is not justified in assuming the responsibility.

It is not the writer's intention to discuss the etiological factors in the prognosis of chronic nephritis; therefore infections, including the focal infections, toxemias, personal habits and familial nephritis only need be mentioned. It is desired, rather, to call to mind modern routine methods of estimating renal damage, and their value in forming a prognosis in chronic nephritis.

A general physical examination distinguishes the edema, which may be due to a coincident anemia, broken cardiac compensation, or general angioneurotic edema, from that which is due to defective kidney function. Examination of the urine, together with physical examination, will also detect the so-called surgical kidney, of whatever type. The relation of arterial hypertension to chronic nephritis is not yet conclusively settled. Albutt¹ definitely shows that the cases in his group of hyperpiesia are not caused by a nephritis nor by arteriosclerosis. He believes arteriosclerosis to be a result of high blood-pressure in those cases of raised blood-pressure in which it occurs rather than its cause. Moschowitz² goes farther, and states that he believes many, if not most, hypertension cases belong to the group of essential hypertension, or hyperpiesis, and advances strong arguments in favor of the view that in chronic nephritis, high blood-pressure may easily be the cause of damage to the kidney,

rather than a result of it. In support of this conviction is the fact that there is no parallelism between the degree of hypertension in the arteries and the degree of damage to the kidney. If high blood-pressure were caused by kidney disease, we should expect a higher reading in the cases in which the kidney is the most damaged. This is apparently not the case. If we accept this view arterial hypertension yet remains as a factor to be reckoned with in forming our judgment of the future progress of the case, because of the possibility of cerebral, retinal, or other hemorrhage. While it may be true that people may live, as we know they do, for many years with blood-pressures above 180, clinical experience teaches us that a constant blood-pressure of this height exposes its owner to very great risks. We shall find it very hard to divorce ourselves from the impression that there is a direct relation between renal disease of certain types and hypertension. Whatever may be the ultimate explanation of arteriosclerosis,—whether a result of essential hypertension in the first instance, or its cause, still it is important, along with cardiac hypertrophy, in chronic nephritis. The tendency toward the inevitable break in cardiac compensation must always be considered.

Adequate comprehension of renal conditions involves an examination of the blood for non-protein nitrogen, urea nitrogen, uric acid and creatinin, and possibly for blood sugar. These substances, when retained in the blood in amounts above the normal figures, give us important, if not the *most* important, information we can get as to the degree of impairment of kidney competency.

In early interstitial nephritis, so called, the first ingredient to be found in increased amounts in the blood is uric acid. As the nephritis advances and the kidneys become less able to eliminate from the blood, the urea also appears increased in amounts in the blood. The last substance, as was first noticed by Myers and Fine³, to be increased is the creatinin. Chase and Myers⁴ give a tabulated list of figures which well illustrate this effect. The greatest amount of retention of urea, uric acid, and creatinin in the blood occurs in advanced cases of chronic interstitial nephritis, particularly with uremia. Myers and Lough⁵ found that when the creatinin in the blood appeared in a concentration of 5 mg. per 100 c.c. of blood, the prognosis was extremely bad for life, all their cases terminating fatally in less than two months. Most observers corroborate their

results. While an estimation of blood sugar is not ordinarily undertaken in cases of nephritis, Williams and Humphreys⁶ found that an increase in the amount of blood sugar over the normal was of rather serious prognosis for the nephritis, inasmuch as this appears only in the more serious cases. Myers and Killian⁷ and others believe that, as an index of the defect in permeability of the kidney, the increase of the creatinin in the blood is safer than the increase of the urea, because the creatinin on a meat-free diet is entirely endogenous in origin; therefore its formation and its elimination in the urine is normally constant. Furthermore, when the creatinin in the blood reaches a value as high as 5 mg., the kidney is apparently not able to overcome or lessen the accumulation in the blood. However, as an index to the efficiency of treatment, the variation in the amount of urea in the blood is more reliable than the variation of creatinin.

The upper normal value for non-protein nitrogen in the blood is taken as 30 mg. of non-protein nitrogen, 15 mg. of urea nitrogen, 2 mg. of uric acid, and 2 mg. of creatinin per 100 c.c. of blood. The work of Upham and Higley⁸ shows that a much more accurate estimate of the stage of a chronic nephritis is obtained by a study of the power of concentration of the kidney for uric acid, arrived at by dividing the amount of uric acid in the urine excreted by the amount of uric acid in the blood. They show, conclusively, that the ability of the kidney to concentrate uric acid varies constantly with the stage of the disease, and is remarkably accurate. This method promises to become a most important and valuable procedure.

Ambard's coefficient and McLean's index show the relation between the concentration of urea in blood and the rate of its excretion in the urine. This relationship, expressed numerically, is said to be nearly constant in health. The figure rises definitely as the degree of kidney impairment progresses.

Blood chemical methods may now be carried out by using Folin's⁹ later processes, with only 10 c.c. of blood, a single specimen being sufficient for the determination of all essential data.

The phenol-sulphone-phthalein test of Gerahty and Rowntree has practically superseded all the other tests of the ability of the kidney to excrete dyes. Because of its simplicity, it has been used by many physicians who have not understood its limitations. It has, of course, no bearing on the kidney function to excrete any other substance

than the phenolsulphonethalein, and, if not understood, may be deceptive. For instance, in the congested kidney, a very low P. S. P. value may be obtained, while, with uremic symptoms already evident in another case, a much higher percentage may be expected. In old people relatively low values are the rule.

The test diet of Mosenthal is devised to show the ability of the kidney to concentrate solids under known conditions. Taken alone, it is not of very great significance, but only when corroborated by other tests and signs of nephritis.

Passive congestion of the kidney on account of cardiac insufficiency exaggerates the impairment of kidney function. This complicates the problem of estimating the competency of the kidney when there is also impairment of the heart competency. Under these circumstances, it is very difficult to differentiate the results of heart and kidney disease. The "cardiorenal complex" is the very popular diagnosis, largely because instances of this sort are so frequent.

Acidosis in chronic nephritis occurs because of the inability of the kidney to eliminate substances from the blood which tend, when eliminated, to maintain the alkaline reserve. It is recognized and estimated by the same means that are made use of in the acidosis of diabetes, by the Friedericia or by the Van Slyke hydrogen-ion tension, Marriott's, or other methods.

It is in the cases of chronic nephritis with hyperarterial tension that blood chemistry, phenolsulphonethalein function, concentration-diet tests, and careful uninalyses are of the greatest service. Mosenthal¹⁰ well expresses the view of clinicians who see much of this kind of work by saying, "Functional kidney tests and various symptoms of nephritis indicate how far the efficiency of the kidney is impaired, and to what degree the retention of urinary products within the body has progressed. The interpretation of the significance of such findings is, unfortunately, largely a matter of personal impressions and experience."

Examination of the eye-grounds for hemorrhage or albuminuric degeneration has considerable value in this class of cases. Albuminuric retinitis is usually considered to signify a very advanced case of nephritis, with a prognosis of a few months to a year of remaining life. That there are many exceptions to its limits the writer can testify. One patient lived five years, to die of uremia, after such a prognosis had been given,

when the retina showed a high degree of white infiltration.

Patients with moderate nitrogen retention in chronic nephritis present a most interesting problem. There is always the question whether the progress of the disease can be stayed. We know that an adult with chronic nephritis does not recover. Many of these cases with only moderate increase in the figures obtained by blood chemistry show normal values on a protein-free diet. It becomes, then, a very interesting problem, and its solution of great value in prognosis, to determine experimentally the tolerance of the individual for a diet sufficient for mere maintenance or more than that. It is sometimes possible by watching the urine and blood under this procedure accurately to foretell the future of the patient.

With the prominence that has been given to tests of kidney function and the determination of nitrogen retention in the blood, there is a tendency to lose sight of the fact that by these methods we have obtained only a more and more accurate knowledge of the degree of impairment of functioning renal tissue. To some extent these methods classify the nephritides, so that a prognosis can be made, as regards the renal condition alone, along general lines, as a mild, moderate, or advanced case. It is a mistake to assume that, taken alone or together, laboratory methods up to this point are sufficient, at least for him who desires to go as far as possible, in estimating

the future progress of the disease, and, therefore, its care. They furnish accurate data for the real problem which still remains, namely, given an individual with these findings, what is it possible to do to prevent further progress of his trouble? How far is it going to be possible to prevent further injury to his kidneys, and the secondary results of kidney disease? How much and what can he eat? Incidentally, can he take safely enough food to maintain strength, and at the same time allow him to work? At the stage in the disease in which the patient usually seeks help, these are after all the paramount issues,—the end to which laboratory methods are only partially the means.

At this point in the study of the case, the patient becomes the subject of experimental work, controlled by his blood studies, functional, and urine examinations to determine what his tolerance for food may be. If possible also his tolerance for exertion may be found.

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THE RESPONSIBILITY OF THE PHYSICIAN IN OTOTOLOGY*

BY HORACE NEWHART, M.D.

MINNEAPOLIS

Otology has long been, at least nominally, a required subject in all of our class A medical schools.

After attempting to teach this subject during the greater part of ten years, we may take the liberty of asserting that in proportion to its importance there is no branch in medical science which has been so generally neglected as diseases of the ear; nor are there many fields in medicine more promising as to possible results than otology.

The attitude of the average practitioner toward the subject of otology after graduation, or as

soon as he finds compensating work in other lines, is usually one of passive indifference, if not one of confessed helplessness or even boasted ignorance. This statement is not made as an unkind arraignment of the medical profession, but as a frank admission of an actual condition whose general recognition will do much to correct harmful shortcomings and will enable us to discharge more fully our duties to the public.

That the general practitioner is not enthusiastically interested in otology is due largely to the failure of our undergraduate schools to provide adequate instruction in this subject, with the result that the graduate in medicine is insufficiently prepared to cope successfully with even

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the ordinary ear disorders which fall very properly within his province. Another large factor which has made otology unpopular has been the almost universal tendency of the laity and the profession to neglect all but the most obvious or painful ear affections, until it is too late for even the specially trained otologist to handle them with any possibility of securing brilliant or satisfactory results. This tendency to neglect the ears is almost as common among the intelligent and well to do as among the indigent.

How poorly the profession has succeeded in the practical application of the first principles of modern otological teaching and how great is the need for an awakening of interest in the subject are convincingly proven by the prevalence of ear diseases and the consequent impairment of hearing which exists at the present time.

Recent reports of defects found in drafted men in the United States Army disclose the presence of ear disorders in 42,000 out of 2,754,000 men, and it is not unfair to the examiners to assume that only the more noticeable lesions were recognized. Medical examinations in our public schools show that from 2 to 6 per cent of children of school age have chronic suppuration in one or both ears, and from 2 to 14 per cent have defective hearing. The variations are due to conditions in different schools and to the personal accuracy and skill of the different observers. As the average examination, of necessity, is carried out hurriedly and with unfavorable surroundings, many cases escape detection.

Von Troeltsch has gone so far as to say that among persons over twenty years of age, when tested with great accuracy, one out of every three shows some impairment of hearing. Professor Koerner, of Rostock, made the surprising, but as yet unrefuted, statement that 4 per cent of all deaths occurring in Prussia under the thirtieth year of life were due to ear diseases.

On the basis of available statistics, it has been conservatively estimated that there are in the United States today not less than 3,000,000 persons whose hearing is so impaired as to exclude them from many occupations and to interfere, more or less, with their educational progress and social contact with their fellows.

A single manufacturer of an electrical apparatus to aid the hard of hearing publicly advertises that there are in use 400,000 of his appliances. Doubtless many other afflicted persons

would purchase the same sort of contrivance if they could pay the price or could endure the annoyance of wearing the apparatus.

The wide prevalence of ear diseases suggested by the above figures has an added significance when we realize that it is universally conceded that from 75 to 85 per cent of all diseases of the ear and the associated impairment of hearing acuity are absolutely preventable, and that at least three-fourths of all such cases could be eliminated in a single generation.

The responsibility for the prevention of ear diseases, in common with all other beneficent movements for health reform, rests primarily with the medical profession, and this responsibility falls with much greater weight upon the man in general practice than upon the otologist; for it is the former who, through frequent and intimate contact with the many, is alone in a position to give help and advice at the time when it will be most productive of results.

While public interest has for a long time been actively concerned in the conservation of vision, and nearly all of our states have laws to prevent ophthalmia neonatorum and to safeguard the eyes against carelessness in industrial plants, and there exist numerous societies to promote the welfare of the blind, there has been a conspicuous absence of organized effort for the prevention of ear diseases, and until recently no specific steps have been taken in this direction. But we must acknowledge with pride the liberal provisions which have been made for the education of the deaf.

The situation as regards the prevention of deafness, however, is rapidly changing. The concern of all classes has of late been aroused as never before to the need of bettering the physical condition of the individual; and in this fact lies our chief hope for a speedy improvement in the situation as regards the conservation of hearing.

Ever since his own specialty first laid claim to recognition, the pediatrician has been a staunch ally of the otolaryngologist. He has been quick to appreciate the importance of the prompt detection and early treatment of ear diseases among the young, and has urged the elimination of all local disturbances of the upper respiratory tract which lead to ear involvement.

Medical inspection in our public schools and other educational institutions has already accomplished much for the cause of otology through the early discovery and correction of ear diseases in those of school age. Many of our normal schools are now including in their required work courses

in school hygiene which fit the teacher to recognize defects of the special senses and to suggest the importance of early treatment; so that even in the more remote communities the young will not be neglected as they have been in the past.

As a further assurance that some day we may hope to see deafness a relatively uncommon affliction, it should be noted that an able committee of representative organizations of otolaryngologists and of the Association of American Medical Colleges is at the present time at work in an effort to standardize and make more effective the teaching of otology in our undergraduate schools.

In view of the manifest awakening of interest in all that pertains to the conservation of health, including the conservation of the organs of special sense, we may well pause to consider what are the responsibilities of the physician (in distinction from the specialist) to the public as regards otological practice. Surely, in communities where there is no specialist, or in a practice in which his patients look to him as their advisor in all medical branches, he can no longer consistently sidestep his obligations.

In a general way he should make himself as familiar with the elementary facts of otology as he is with the fundamental principles of other departments of medicine. This implies, first of all, that he should be able to make a complete functional test of the hearing, in order that he may detect even slight departures from the normal, and differentiate a lesion of the sound-conducting apparatus from one of the sound-perceiving apparatus. This involves a practical working knowledge of the ordinary tuning-fork tests of Rinne, Weber, and Schwabach, and the ability to detect any material reduction of the lower and upper tone limits. In view of the present demands upon one's skill, an ability to use the tuning-forks should be as much a part of one's preparation to practice medicine as is the use of the microscope or the blood-pressure apparatus. He should be able to recognize with certainty the presence of any lesion of the upper respiratory tract which might be a causal factor in producing ear disease.

Any less knowledge than what has just been indicated is absolutely inadequate, for it is only by the very early detection of departures from the normal and the immediate removal of all active factors that we can hope to make any material gains in combating those insidious affections which cause so large a percentage of deafness, often first noticed by the patient only after he has

reached adult age. We cannot emphasize too strongly this point, for the average individual is, as a rule, quite unaware of any gradually oncoming impairment of his acuity of hearing until it is reduced to less than 20 or even 10 per cent of the normal. Therefore, it is of the greatest importance that the family physician insist upon regular periodic examinations of all his regular patients according to their individual ages and needs. He should include such a test in every general physical examination and in the examination of applicants for life, health, and accident insurance. In the event that departures from the normal are detected, the cause must be at once investigated and its prompt removal secured.

The practitioner should know that not infrequently the presence of an impairment of the sound-perceiving apparatus (that is, nerve deafness) points to a focal infection outside the middle ear or to some systemic disease. The recognition of this fact and the further knowledge that symptoms on the part of the static-kinetic labyrinth are often the expressions of disease in other parts of the body, emphasize the truth, too often ignored, that otology can no longer be considered as an isolated branch of medical science.

It follows that he is a better otologist who will maintain the broadest possible interest in medicine as a whole. And the general practitioner unquestionably will be a more efficient diagnostician and therapist, if he will utilize in his work the teachings of otology as it is related to other departments of medical knowledge.

In the discharge of his obligations to the public in the field of otology, the medical man must help to combat certain popular fallacies regarding the ear, some of which, unfortunately, lurk as superstitions in the minds of not a few of the profession itself. We refer among other things to the prevailing attitude toward operations on the mastoid. Many lives are sacrificed annually because of a traditional, but groundless, fear as to the results of such operative procedures. The indications for operation are now so well understood that, both to avoid complications and to preserve the maximum of hearing, when once the conditions demanding operation are recognized, no time should be lost.

Experience, gained largely during the present epidemic of influenza, makes it wise to call attention at this time to the fact that it is seldom necessary to delay an indicated mastoid operation because of the presence of pulmonary, nephritic, or cardiac disturbance, making a general anesthetic

unsafe. The operation is very satisfactorily performed under local anesthesia. During the past three weeks we have had occasion to do the simple mastoid operation seven times under a local anesthetic, the patients being from twelve to thirty years of age. In none of these cases was there complaint of severe pain, nor was there evidence of great nervous strain.

The almost universal neglect of chronic suppuration of the middle ear may be regarded as a serious indictment of the intelligence of the physician as regards his comprehension of modern views on the surgery of the ear. It is a well established principle that, with but few exceptions, every chronic suppurating ear which does not yield in a reasonable time to careful treatment should be given surgical care in the form of a radical or some modified form of the radical mastoid operation, but only at the hands of a skilled aural surgeon. The operation thus performed involves so little risk that this is negligible compared with the ever-present danger from endocranial complications, the certainty of a progressive loss of hearing, and the possibility of serious remote effects from the focal infection within the temporal bone.

It is well within the scope of this paper to sound a note of warning against the possibility of overlooking two very dangerous aural conditions which may escape diagnosis until autopsy. One is a chronic suppuration of the attic, which may exist with but few symptoms. The hearing is often well preserved, the discharge is usually so slight as to cause the patient no consciousness of its presence, and the only otoscopic evidence of its existence is a small defect in Shrapnell's membrane, covered with a minute quantity of pus or with an accumulation of scales of dried purulent discharge. This form of middle-ear suppuration is a frequent cause of brain abscess or meningitis. The other condition we may designate as a latent or occult mastoiditis which is prone to occur in epidemics of perforative otitis, with the pneu-

mococcus or the streptococcus mucosus as the predominant micro-organism. In such cases the middle-ear suppuration has run its course, the discharge has ceased, and the perforation is healed, but the drum-head is slow in clearing and its lustre is absent. The hearing may have shown decided improvement. The patient complains of a vague discomfort in the mastoid region, possibly has a unilateral headache, and deep palpation often discloses sensitive points over the mastoid process. The *x*-ray usually gives positive evidence of disease within the bone. Such cases call for early operative interference.

It has been far from the purpose of this paper to advocate that every man in practice should qualify as a specialist in otolaryngology. It does, however, suggest the question: To what extent may the general practitioner invade the special field of the otolaryngologist? The obvious answer is that the man in general work, if he would meet the urgent needs of his practice and discharge his just obligation to the public, must be prepared to give better service in the line of otolaryngology than in the past. His activities, however, must be strictly confined within the limits of such procedures as he is qualified safely and intelligently to perform, and should never be extended to the point of assuming responsibility beyond his skill. Moreover, the scope of his work must depend in each case upon his individual training and upon the geographical location of his practice as regards accessibility to men of more highly specialized training that he himself possesses.

The passing of ear diseases and of deafness within the life period of one generation cannot be hoped for by even the most enthusiastic optimist, but, through a generous co-operation on the part of the general physician and the otologist, and the utilization of every educational and other agency engaged in a crusade for better hygienic conditions, we may well hope to see within a single decade a great reduction in the number of those destined to be afflicted with ear disorders.

SPEECH WORK OF THE DAY SCHOOL FOR THE DEAF IN MINNESOTA*

By ELLA RUSCH

Supervising Teacher, Jackson School
MINNEAPOLIS

Prior to 1915 there was but one provision made by the State of Minnesota to educate a deaf child, and that was in the State Institution. The parents of such a child must choose between the Institution and an Eastern private school, either of which choices meant that the child must be away from all home ties from September through to May or June, for nine or ten months of the year. Then he would come home during vacations to people who were complete strangers to him.

In 1915 the State legislature passed a bill providing for the establishment of day schools in the State of Minnesota. Permission to establish these special classes may be granted to any district which has an actual attendance of not less than five deaf children, over four and not exceeding sixteen years of age. One hundred fifty dollars is allowed out of the current school fund each year for each child instructed at least nine months of the year.

At present there are four day schools for the deaf in Minnesota, one each in St. Paul, Minneapolis, Duluth and Brainerd. The Minneapolis Day School for Deaf is located in the Jackson School at Fifteenth and Fourth Street South. We have five classes with a total enrollment of forty-one pupils, thus making an average of eight pupils for each teacher. This no doubt seems like a very small class, but when you understand what it means to give a deaf child speech, language, and lip-reading, as well as the regular academic subjects, you will see that a class of seven or eight is an ideal class. Four of our upper grade pupils are carrying their academic subjects with the normal-hearing children and come to the teacher of the deaf only for their technical deaf subjects.

It is surprising how many well-informed persons are not yet aware of the fact that the deaf are taught speech. Many times we hear the remark, "So you teach in a deaf and dumb school." People have associated dumb with deaf for so long that, when you tell them that the children are not dumb but are taught speech, they look at you with an expression which tells you very plainly that they doubt your statement. In order

to understand what other people are speaking the deaf child must learn to read the lips.

At four years of age the normal-hearing child has speech and understands some language, while it has no need of lip-reading. The deaf child at the same age must put forth great effort to get all these accomplishments that his hearing brother and sister have achieved with very little effort. Besides the technical subjects for deaf instruction, the children follow the city course of study in reading, arithmetic, geography, drawing, writing, and gymnastic and industrial subjects.

The degree of speech efficiency depends upon several conditions:

First, the mental aptitude of the child. At a very early age it is often difficult to determine whether a child is deaf or mentally defective, or perhaps both. Such a child should have a trial of at least a year, if not two years, and then, if no progress is made, the oral method should be abandoned and the sign method taught.

Secondly, the condition of the organs of speech, by which I mean the lips, tongue, teeth, and the hard and soft palate, as well as the pharynx and larynx. If the teeth are crooked and the palate is highly arched, speech will not be distinct. Dental or orthodontia work will usually remedy these defects. Enlarged tonsils cause a great deal of trouble in speech work. On the whole the parents of our pupils are only too glad to co-operate with us and carry out what has been recommended. A doctor of the School Hygiene Department examined all the pupils last year, and the examinations this year showed that the parents had followed the advice given by the doctor. Many of our pupils have gone to the University Dispensary, especially for refraction.

The third, I think, is quite the most important condition which determines speech efficiency, that is the age at which the deaf child enters school. If possible, the child should enter school when four years of age. Before this the mother and home people can do a great deal to encourage a child to babble, hum, or any sound it happens to make. John Dutton Wright, Principal of the Wright Oral School in New York City, has published a book, "What the Mother of a Deaf Child Ought to Know," and is now

*Presented before the Hennepin County Medical Society, March 1, 1920.

offering a course by correspondence for mothers of small deaf children.

You can readily see what an effect the age at which a child enters school will have upon its speech. If the muscles of the organs of speech have become stiff and rigid it is very difficult to make them pliable and function so as to produce good speech. When we think of the intricate muscles which control the vocal cords we realize what an early and continual use of these muscles will mean to a deaf child in voice modulation. When a child enters school at four or five years of age the first two years are given to voice work with kindergarten and Montessori work. The child does the voice work by feeling the vibrations on the teacher's face and by imitation. The Montessori work, which pertains to the training of the senses of sight and of feeling, is an important factor. With piano work the pupils put their hands on the piano, thus feeling the vibrations. With closed eyes they are able to distinguish the number of beats to a measure, as 1-2, 1-2-3, 1-2-3-4; the accented beat in the measure, as 1'-2-3, or 1-2'-3, or 1-2-3'; and the loud and soft tones and the high and low tones. Combinations, as ba-ba-ba, are used instead of the numbers, then words, and finally sentences.

The drills in voice work are arranged so as to exercise all the organs of speech. For example, p and b combined with the vowels exercise the

lips; t and l combined with vowels exercise the tip of the tongue; k the back of the tongue; and n combined with *ge* raises and lowers the soft palate.

The smallest amount of hearing is of great benefit to a deaf child. It may not be of any assistance in hearing what another person says to him, but it is of great benefit for better speech and voice modulation.

The deaf child must make double use of his eyes. They must be eyes and ears for him, as it is by watching the lips that he can understand what people are saying. When a deaf person has mastered lip-reading he has accomplished one of the most difficult of arts. The average American is considered lip-lazy. We do not open our mouths when we speak, but mumble behind our teeth or closed lips. For instance, take p, b, and m. P is made by a current of breath, unvocalized, which is stopped by contact of the lips, and is then expelled with a puff, when these organs separate; b is the vocalized form of p, and m appears the same on the lips as p and b, but it is a nasal sound. In the same way, t, d, and n and k, g, and ng are revealed to a lip-reader by identical movements. The mind must be trained to overcome the limitations of the eyes. The lip-reader must not expect to get every word from the lips, but must get a sufficient number so as to get the thought.

SOME OBSERVATIONS ON ONE HUNDRED CASES OF CARCINOMA OF THE STOMACH*

BY HUGH S. WILLSON, M.D.

MINNEAPOLIS

The subject matter of this paper was obtained from the study of one hundred consecutive cases of carcinoma of the stomach. This number is taken on account of the ease of determining the percentage statistics, and the cases were examined between 1914 and July, 1917. The number of cases mentioned also stands for the percentage of cases considered.

Only points of common interest will be considered. They include age, sex, occupation, length of history, history of vomiting and vomiting blood, mass, location of the growth, weight loss, free hydrochloric acid, lactic acid, x-ray, and operability.

The ages ranged from 25 to 80 years.

Three per cent of them were 30 years or under—25, 27, and 30, respectively.

The next decade, or between 30 and 40, had 9 cases, or 9 per cent.

Between 40 to 50 had 21 cases.

Between 50 to 60 had 36 cases.

Between 60 to 70 had 26 cases.

Between 70 to 80 had 5 cases.

The rising line, starting at 3 per cent under thirty, more than doubles with each decade up to the 60 to 70 mark, at which point there is a rapid descent, owing to the greatly diminished fuel to feed the fires.

Sex: males, 77; females, 23.

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Occupation: There was 1 each of the following occupations, expressman, tailor, bartender, furrier, printer, plumber, mason, blacksmith, movie operator, dentist, minister, veterinarian, physician, civil engineer.

There were 2 each of carpenters, clerks, engineers.

There were 3 peddlers, 8 laborers, 12 business men, 22 housewives and 35 farmers.

Length of history: 4 cases, or 4 per cent, came in complaining of slight distress for from one to three weeks.

There were 7 more with no history previous to two months, or a total of 11 per cent with symptoms of not longer standing than two months.

There were 6 with symptoms for three months, and 8 for four months, making a total of 25 per cent with four months or less of symptoms.

A rather discouraging observation may be made here. All of the 11 per cent with symptoms of from one week to two months were considered inoperable, and were not even explored.

Of those three and four months' histories, 4 were inoperable, 8 were explored and closed, and two were resected, one of whom died before leaving the hospital, and the other within two years.

Of the 8 explored, we had called 4 inoperable, but they wished to be explored. The four for whom we thought something might be done proved inoperable on account of glandular involvement and metastasis.

All those with a history of four months or under are now accounted for.

Nineteen per cent had symptoms from four to eight months, of whom 11 were inoperable, 5 explored, and 3 resected.

Please bear in mind that several cases marked explored, were explored only on the insistence of the patient, and were not considered operable. Also there have probably been included under inoperable, two or three who were advised to have exploration with possible resection, but declined.

Sixteen gave an eight to twelve months history, of whom 8 were inoperable, 5 explored, and 3 resected.

Eleven had a one- to two-year history; seven were inoperable; 2 were explored and 2 resected.

Seven cases stated that they had stomach trouble for three years, and the remaining 22 cases said that they had stomach trouble for from six to forty years.

In a high percentage of cases with a long his-

tory a fairly good ulcer picture could be elicited in most instances, but the total of cases with a history of three years and over are only 29 per cent.

A high percentage of cases with precancerous history of ulcer is noticeably absent in this series.

To sum up the operability of these cases:

Eighty-six per cent were inoperable although 31 per cent were explored.

Fourteen per cent had resections.

Vomiting: 64 per cent gave a history of more or less vomiting; 12 of the 64 vomited blood.

Palpable masses: 54 had a palpable mass.

Location of growth: 5 of the entire stomach; 47 of the pylorica; 8 of the pylorica and media; 17 of the media; 5 of the media and cardia; and 18 of the cardia.

This is an exceptionally high run of cardia cases.

It is of interest to note that during the time of the examination of this series of carcinomas of the stomach I examined seven cases of carcinoma of the esophagus, four being in the middle third and three at the cardiac end.

Weight loss: None in 4 cases; less than five pounds in 5 cases and on up to eighty pounds.

Free HCl: 1 case with eighty points of free HCl and a total acidity of 110.

Others had, respectively, free HCl of 70, 68, and two of 50 points; 3 between 40 and 50; 6 between 50 and 40; 8 between 20 and 30; 12 between 10 and 20; and 4 between 5 and 10.

Five might be called a hyperacidity; 9 with normal acidity, and 8 with low acids and 16 more showing free HCl, between 5 and 20 points.

Lactic acid was found in only 17 cases.

I have omitted the study of motility in these cases, as it would require too much time.

The x-ray was positive for a lesion in 100 per cent, but could not in all cases differentiate between ulcer and carcinoma.

Other methods are essential in a considerable number of cases to differentiate the lesion.

The surgeons who have operated on these cases are unable to give the pathological findings as to the type of carcinoma.

On account of being absent for nearly two years I have not been able to follow up all of these cases, and, therefore, will not attempt to give the final statistics, but it is a sad tale after all is said and done. I know the outcome of nearly all, and so far know of only two who are living today.

Early diagnosis furnishes, of course, the only way of doing anything for these people.

When patients come into our office with a history of a few weeks of rather insignificant symptoms, and one finds inoperable carcinoma of the stomach,—which often happens,—it is discouraging. This applies to that class in which we are seeing so many patients.

Cases with long histories where carcinoma is superimposed on ulcer present a different but also a perplexing problem. There is only one way in which a diagnosis can be made oftentimes, and that is with the microscope.

In conclusion, there are five points that I wish to bring out in regard to certain findings that are very frequently misinterpreted by those whose experience is limited in this particular field.

1. Age. Carcinoma of the stomach has been found at all ages and is quite frequent before the so-called cancer age.

2. Presence of free HCl. There are several

cases in this series with high free HCl and many with free HCl present.

3. Palpable mass. Frequently the tumor never becomes palpable during the entire course of the disease. This depends on the location, character of the growth, and the habitus of the individual.

4. Cachexia and wasting. Occasionally we see a case run its course until the terminal stage without cachexia or appreciable loss of weight. This is especially true of carcinoma of the cardiac region.

5. Lactic acid and Oppler-Boas bacilli. These are not present unless motility of the stomach is interfered with, that is, pyloric stenosis or obstruction.

I think these five points are those on which one is most apt to be misled.

They are all included in a text-book picture as necessary to make a diagnosis, but they may all be absent and there still be carcinoma of the stomach.

SOME COMMON IRREGULARITIES OF THE HEART*

BY OLGA S. HANSEN, B.S., M.D.

MINNEAPOLIS

The heart is a mass of nerve and muscle tissue so wonderfully constructed and regulated that it acts with the regularity of a clock from the early life of the fetus to the last breath of the dying man. Any departure from this regularity which we have come to expect, calls attention to itself, demands explanation, and, if producing symptoms, requires treatment. Within the last few years enormous strides have been made in the study of the underlying causes of these irregularities, so that it is now as necessary for us to recognize the origin of an irregular heart-beat as to decide upon the source of a murmur in the heart-sounds.

A flood of new machines, new methods, and new names has been poured upon the medical practitioner with such rapidity and profusion that he feels overwhelmed by them all, and says, "An irregular heart is an irregular heart. What do I care whether it has a P-wave, a ventricular complex, or what-not?"

My purpose in this paper is to describe three of the common irregularities of the heart so

that they may be recognized clinically, and to explain the conditions in the heart that cause them.

The simplest and most common type of irregularity is one present in most children and young people. It is often observed when the heart-rate slows after exercise. When the examiner feels of the pulse or listens to the heart, he will find a wave-like change in the rate, though the beats are all of the same size and intensity. Holding the breath accentuates the variation in rate, causing either increased slowing or increased rapidity for a few seconds. If the patient exercises again and the heart beats faster, it again becomes perfectly regular. This is known as a sinus irregularity, because it originates in the sinus or the normal pace-maker region, or is a vagus irregularity, because it is due to reflex stimulation of the vagus nerve. Each beat is a normal beat in every way, but the rate varies from second to second, in an orderly wave-like manner.

This type of arrhythmia is important from the standpoint of diagnosis chiefly. It is normal in young people, but may occur in an adult whose nervous system is irritable from any cause, such

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as drugs, toxemias, and emotions. It demands that they may be recognized clinically, and to no treatment except reassurance as to its non-importance.

A patient may tell you that his heart stops beating at times. He says, "My heart seems to be going all right when suddenly it gives a jump in my chest and stops beating for a second." This is often described as a dropped beat, but that term is incorrect. What he really feels is a premature beat, called an *extrasystole*, and the pause which follows it. The stethoscope over the heart shows an occasional sharp, quick, small beat coming immediately after a normal beat, followed by a long pause. At the wrist the small beat is often not felt, and the pause seems still longer. The heart has a dominant rhythm, that is, a definite system of regularity which is broken by an occasional beat which comes in too early. This irregularity is shown to be due to an impulse originating in some part of the heart other than the normal pace-maker, which comes in ahead of the normal impulse and causes an early beat. The heart muscle is then not able to respond to the normal impulse when it comes and must rest till the second impulse stimulates it to action.

This type of irregularity occurs in many cases of valvular disease, in arteriosclerosis, after acute infections, after overuse of coffee or tobacco, in gastro-intestinal disturbance, in the course of the administration of digitalis, and very frequently in patients in whom we can demonstrate no signs of cardiovascular disease. It simply means a point of increased irritability somewhere in the heart muscle. With this in mind, we treat the patient and the heart, ignoring the presence of extrasystoles. However, if they arise in the course of digitalis medication, we stop the digitalis. This type of irregularity is of itself not serious, and does not contra-indicate an anesthetic.

Almost without exception, neither sinus irregularity nor premature contraction interferes with the satisfactory function of the heart. On the other hand, the third type to be considered, total irregularity or auricular fibrillation, usually arises, first, at a period of more or less broken compensation. It may be recognized by the complete absence of all rhythm or system of the heart-

beat. The stethoscope shows that no two beats and no two intervals are alike. The jugular shows an irregular pulsation with only a single wave to each ventricular beat, although the jugulars are usually distended. This may be brought out by throwing a shadow along the course of the vein to exaggerate the waves, as Dr. A. D. Hirschfelder has shown by using a small card. The rate is usually rapid in a case when first seen with a total irregularity. Many of the beats may be ineffectual and not able to cause a pulsation at the wrist. The difference between the heart-rate and the pulse-rate is known as the pulse deficit, and occurs only in the rapid fibrillations, usually in hearts with distinct decompensation. However, a heart may be slow (60 or less) for years, and show no pulse deficit, but still have a complete irregularity. It is now known that the auricle in these cases is thrown into extremely rapid and wholly inco-ordinate twitchings. Instead of the orderly sequence of the normal beat of the auricle, followed by the beat of the ventricle, 70-80 times a minute, the auricle is fibrillating at the rate of 500-1,000, and an occasional irregular auricular contraction brings on a ventricular response.

The rapid fibrillation is usually accompanied by more or less decompensation, but it is in this condition that the most striking and almost spectacular relief can be obtained from digitalis. However, even though the signs of decompensation decrease, the pulse deficit disappears and the heart becomes slow, the same irregularity persists, and the patient still has an auricular fibrillation except in a very few patients. It is in most cases a perpetual arrhythmia, once it is established. But the patient may be kept comfortable and relatively compensated by using digitalis with intervening rest periods, for years.

In conclusion, emphasis should fall on the following points:

1. Almost all irregularities can and should be differentiated clinically.
2. The large majority of arrhythmias require no medication.
3. Digitalis is indicated in a fibrillating heart with decompensation.

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MINNEAPOLIS CLINIC WEEK

The plans for Clinic Week seem to be crystallizing slowly but steadily. The first announcement we can make is that Dr. Charles H. Frazier, celebrated surgeon of Philadelphia, is to be here for the evening of the nineteenth of April, when the Hennepin County Medical Society gives its annual banquet, to which the visitors are invited. He will present an address on something that is interesting to him; and whatever interests him will be of interest to his hearers. Dr. Frazier has become a very noted neurological surgeon, and whatever work he has undertaken he has planned out himself, making some original investigations before findings are accepted by all medical men. Fortunately, he is a pleasing talker; he talks to the point, and his papers and addresses are always most interesting.

The afternoon clinics will be held in the Gold Room of the Radisson Hotel, with the following subjects and chairmen:

Tuesday—Orthopedics and Pediatrics—Dr. Archa Wilcox.

Wednesday—Medicine—Dr. S. Marx White.

Thursday—Head Specialties—Dr. J. H. Morse.

Friday—Military Surgery—Dr. A. A. Law.

The principal feature of each afternoon program will be live clinics given by men who are able to present a snappy, concise history, and demonstrate their clinical material. Very naturally, these cases will be largely ambulatory, so that they can get about in different parts of the room.

Then, too, the presentation of the pathological

specimens will be of special interest this year, as there have been many changes in our departments of pathology, and we must necessarily expect a rather different viewpoint in many of the well-known disorders on account of the influence of influenza and the various bacterial diseases which have become so highly developed during this last year or two.

Arrangements are being made now with eastern film companies to present moving pictures of various departments in medicine, surgery particularly; microscopic slides; the movements of micro-organisms and their effect upon the somatic system. And there have been prepared a large number of lantern slides which demonstrate various phases in medicine, surgery, and pathology.

As previously stated, and it is to be repeated from time to time, no set papers will be given on the afternoon of each day. THE JOURNAL-LANCET has reason to believe that the coming Clinic Week will be more interesting than those which have preceded it.

Visitors who are planning to go on to New Orleans should make their reservations early, whether they go by way of Chicago or St. Louis. And, if it is possible, one or two or more cars will be secured in Minneapolis which we hope will be attached to a through train, or at least so that the visitor may enter the car in Minneapolis and depart from it in New Orleans. Then, in case of overcrowding of hotels, Pullman sleepers will be used to house the visitors who prefer the sleeping-car to a hotel. Announcement will be made later of more definite arrangements, if this can be accomplished in the present jumbled condition of the railroads.

PSEUDO-RELIGIO-MEDICO HYSTERIA

THE JOURNAL-LANCET, on behalf of the medical profession, feels that some comment should be made on the wave of "Divine Healing" that has covered St. Paul and Minneapolis in the past ten days. Whatever criticism we have to offer is made in a spirit of tolerance and without any personal feeling on the part of medical men. Very naturally, the laymen and the clergymen may feel that whatever is said concerning these new waves of enthusiasm, is due to professional jealousy. This is not only improbable, but is emphatically denied, for it is conceded by all doctors that when a wave of this sort breaks over the country it inevitably increases the work of physicians, as it simply calls attention to the fact that

sickness, disease, and deformity exist. This proved, beyond all doubt, to be the fact when Christian Science came into vogue. Every physician's business, particularly that of the neurologist, increased with every bound of Christian Science. So it stands to reason that any method of treatment, whether it is desirable or undesirable, is of benefit to the doctor.

No fair-minded medical man will criticize or deride the claim that prayer and religious influence are beneficial to the sick, except, perhaps, in mental cases; and as more than 50 per cent of the diseases that the human flesh is heir to are mental in origin, this eliminates a large number.

Through the ardent enthusiasm of the Rector of St. Mark's Church, Minneapolis, one James Moore Hickson, an Englishman, was invited to come to Minneapolis on a healing mission. To the physician it looked as if he were holding a large clinic, as the five thousand people who met him in Minneapolis would appeal to the doctor from a clinical point of view. There has been a great deal of speculation as to the value or the necessity of this kind of procedure. Starting as it did, from the Episcopal Church, it rather cuts out the other churches, except those few who choose to imitate the methods of the "healer." But, so far as one can determine, the Episcopal Church is the one largely interested in Mr. Hickson's methods.

To the professional mind, a few points come with extreme directness as to why these missions are held. First, is it an attempt to off-set and to combat the methods of the Christian Scientists? Second, is it not propaganda to attract people into the church, this on account of the lack of church attendance, which has been quite a problem for the clergy in the last two or three years? This, of course, began some time ago, when the church announcements came out; something attractive was offered by many churches in Minneapolis, and in other places,—lectures, moving picture displays, music by talented musicians, all advertised in an endeavor to fill many vacant seats in the church. Third, is there an element of personal or dramatic desire to draw the people, in order to popularize the individual speaker? And, fourth, was Mr. Hickson brought here with a real religious or scientific object in view?

The clergy, as well as the medical men, know that the people are very easily influenced. And when accompanied by preliminary newspaper advertising, and continual advertising during the

progress of the Mission, are we bound to entertain the same respect that we have for the church when the individual clergyman who presides over a church, together with his associates, is unable to bring out a sufficient audience to make it worth while?

Preceding and accompanying the Mission Week, there was a great deal of discussion among the laymen as to what they should do. And in some of the churches there was a great deal of criticism as to the necessity of displaying healing methods to the public in this manner. Doubtless many church members felt that too much had been assumed that was rather unchurchly from some points of view. Is it wise to gather together one thousand people in an audience, most of whom are crippled and deformed and incurable? These comprise the men who walk with canes and crutches; those who are blind and deaf, or partly blind and deaf; and others who suffer from anxiety, worry, and depression,—the real nervous class. To attempt to arouse their hope and enlist their enthusiasm by the laying on of hands, irrespective of the part of the body involved, and the crowding together of the human derelicts who are more or less deficient, either mentally or structurally, seems a rather hazardous experiment. Then, too, the audience, as well as the "healer," in spite of the fact that they laud the doctor and medical methods, forget that, if the medical men were to get together and compare their clinical cases and describe the cures which had followed suggestion, encouragement, or even surgery, and have it published broadcast, the result would be vastly more astounding than the collection of this mass of material. Every doctor has in his mind, or in his notebook, a record of rather remarkable cures, based upon scientific information, carried out by scientific methods, and his cures are just as numerous as those formerly claimed by the Christian Scientists. It seems to resolve itself into a state of mind for most people, and any encouragement that the clergy or the physician may impress upon a patient is helpful. But in which instance does it remain fixed in the patient's mind longest? Without in any way depreciating the influence of the clergy, one is tempted to say that the doctor's cures are more satisfactory than those of the "healer," of whatever type.

Mr. Hickson was careful to avoid the suggestion that there would be any miraculous cure, and, so far, no authentic case of a cure has been reported to the daily press. Mr. Hickson's claim

is, that improvement must come gradually. The doctor has to fall back on this claim very often, because he realizes the necessity of time in many of his patients and their conditions. It is related in the Bible that Christ healed by the laying on of his hands, and the record shows that his cures were immediate. Would these same people who were so remarkably cured in Christ's time be classed differently at this time, and in this age of medical knowledge, or would they be looked upon as cases of serious structural disorder?

We are inclined to quote from Dr. Buckley's work, published twenty years ago, verses from the Bible which apply to this pseudomedical work. This book has some very telling verses about physicians. These quotations are from the Book of Ecclesiasticus, and are taken from Dr. Buckley's book, as follows:

Chapter 38, Verse 1-4: "Honor the physician for the need thou hast of him; for the Most High hath created him, for all healing is from God. The skill of the physician shall lift up his head, and in the sight of great men he shall be praised. The Most High hath created medicines out of the earth, and a wise man will not abhor them."

Chapter 38, Verse 6-7: "The virtue of these things" (the herbs and roots, etc.), "is come to the knowledge of men, and the Most High hath given knowledge to men that He may be honored in His wonders. By these He shall cure and shall allay their pains, and of these the apothecary shall make sweet confections and shall make up ointments of health, and of his works there shall be no end." (We wonder if this last was said in a whimsical, ironical spirit?)

Chapter 38, Verses 9, 11, 12: "My son, in thy sickness give a sweet savour, and a memorial of fine flour, and make a fat offering." (This injunction ought to make doctors be God's friends and love Him) "and then give place to the Physician, for the Lord created him; and let him not depart from thee, for his works are necessary. For there is a time when thou must fall into their hands." (The surest thing we know.)

It happened, during this week when Mr. Hickson was here, that Mr. Tutt was also here,—possibly "Tutt and Mrs. Tutt," who wrote the capital stories in the *Saturday Evening Post*. If he were one and the same man, this lecturer on Christian Science must have been able to give a corking lecture, and secure, by his name and address, immediate attention. So, between Mr. Hickson and Mr. Tutt there must have been a friendly rivalry as to the means and methods of healing.

The editor of THE JOURNAL-LANCET reiterates his lack of personal feeling. His comments must be understood as from the medical man's point of view.

THE NURSING SITUATION

Evidently the medical profession and the public have come to a critical point regarding the employment of nurses, perhaps on account of the increased cost of living and the luxuries which tempt the employed, as well as the unemployed, and which have created a condition among the nurses that is at the present time a very embarrassing one.

A registered nurse, until recently (within the past two years), received twenty-five dollars and three hours' off time. But this winter the Association of Nurses decided that they would have to ask for better wages and more time off. And in spite of the fact that on special occasions they formerly got thirty-five dollars a week for taking care of mental or contagious cases, they have increased their fees all along the line, so that now a registered nurse demands thirty-five dollars a week and five hours off each day. Of course, to the people of means this is not so embarrassing as it might seem, although it becomes a financial burden even to people who are in good circumstances when they employ two nurses, and it cuts off the man of moderate means, the sick person who really needs the attention of a nurse, from the kind of care he is entitled to.

This mild "money" infection has extended, not only to the registered nurse, but to the trained nurse and the practical nurse, and they are all boosting themselves into a high-class profession. Consequently, ways and means must be devised to prevent the extremists from controlling the entire situation.

Some years ago Dr. Haldor Sneve had the temerity to read a paper before the State Nurses' Association when they held their meeting in St. Paul, urging upon them the advisability of a class of nurses who had had one year of intensive training, thus fitting them for the ordinary work which is demanded of a nurse. The Association took decided ground against this proposition, claiming that one year was not enough to give a nurse experience or enable her to meet a situation which a two- or three-year trained nurse would have. So opposed were they to this plan that they secured the enactment of a law controlling the Nurses' Examining Board and the type of nurses qualified to take care of the sick. Then

came the war, the influenza epidemic, and numerous other things which have upset the condition of the entire country. The demand was so great for nurses and so large a number of them were drafted into service of one kind or another that the people suffered in many ways; and that suffering has not been entirely eliminated. The nurses have been slow in coming back from the service, some have changed their occupations, some have married, and some have been killed in action. The result is a slow re-adjustment of the entire situation to the discomfiture of the ordinary middle-class man.

The Visiting Nurses' Association, which is represented in all the large cities, has been a relief in some ways, except as they were interfered with by the epidemic of influenza. Then, too, this Association has created a body of nurses who have been trained in visiting nurses' work, and who go into this work, not for the money they receive, but for the good they can do for sick people. Out of it has come the hourly nurse, who goes to the house and does what is necessary and collects no fee from the poor patient or only a small one from the well-to-do patient. She gives baths, directs the mother as to the care of the child, gives the necessary instructions, and, incidentally, makes an inspection of the family and their diseases, and turns in her report, thus giving her services for a brief period, perhaps at a critical moment, where it is most needed.

If the present situation endures very long some steps will have to be taken by our medical societies and hospitals to provide nurses for incidental or emergency work, and the time must inevitably come when there will be a class of nurses, graded perhaps as to qualifications, trained in the essentials of nursing, who can nurse without assuming too much responsibility, to the entire satisfaction of the community, and also be within the limits of the purse of the ordinary family.

The contrast between the demand of nurses for increased fees and time off and that of the busy doctor who works more hours than he should, is a guide-post which may clear up the situation in time. If a busy practitioner, during an epidemic of influenza or during the time when a number of very sick people are under his care, should decide that five hours during the day he could do as he pleased, he would very soon become an unpopular physician. At the present time, when there is so much sickness and when almost every medical man is rushed and

busy morning, afternoon, and evening, he would not think for a moment of neglecting his work. Neither does he complain if his night slumber is invaded or if he is called in the night to attend someone who is critically ill.

Just how long these demands will prevail depends upon the financial conditions. They are now simply extravagances. A slump is inevitable within a reasonable time, and when this change in prices, both for work and supplies, comes, everything will have to go down into the same pit. And then, perhaps, the hospitals and doctors will be able to create a new class of nurses endowed with sufficient intelligence and training to take the place of the high-grade nurse who considers herself worth thirty-five to forty-five, or even fifty dollars a week. A reformation should be begun in the medical societies, and an appeal should be put up to the nurses so that they will conform in a reasonable manner to the needs of the public.

Then, too, another situation looms up, and that is the difficulty of hospitals securing a sufficient number of applicants or candidates for courses in the schools of nursing. The women who formerly applied for training in schools for nursing are now occupied in other ways, in either industry or office life, and it is questionable now whether some of the hospitals will be able to go on unless they hire trained nurses at exorbitant prices. We recognize the necessity of a responsible, educated, trained nurse. We know that some of the nurses are well worth forty-five dollars a week; but other nurses trained in the same school may not be worth forty-five cents, yet the demands are the same for both types, consequently a more careful weeding out and a more careful investigation of the situation is imperative, and nurses must in some way endeavor to comply with the demands of the public.

THE CLAIM OF SUFFERING CHILDHOOD

"Only evil can result if we who have plenty withhold from mankind the right to live."

These are the words of a Minneapolis employer, James Ford Bell, of the Washburn-Crosby Co., to his men, urging the need for increased production, particularly of foodstuffs. They are applicable to the plight of the ten million German children who are declared, by American relief workers familiar with conditions in Central Europe, to be pitifully undernourished and in danger of starvation.

America never made war on women and children; and America is pledging herself to feed these children until the next German harvest is in, and the German nation is in a better position to look after the needs of its own rising generation. They have the claim on America, these little ones of an "enemy country," that suffering childhood everywhere has upon generous hearts.

Jane Addams, the first American to cross the Holland-Germany border after peace was signed, has given the world some facts regarding the conditions of child-life in Germany. In her tour of the country she found boys and girls and infants everywhere stunted and anemic, too spiritless from exhaustion to apply themselves to their studies, too weak even to play. She found that only the babies over a year old and those most critically ill could be spared as much as half a pint of milk a day; that rickets is so prevalent that 25 per cent of the children will always be dwarfed, and many thousands will never be able to walk; and that tuberculosis is so widespread that Professor Kayserling, of Berlin, one of the greatest German authorities on the disease, declared that, although in former years he never discovered in a year more than fifty cases of bone tuberculosis among children, he now comes across as many cases every month of his clinic.

It was to save the helpless children of Germany from lifelong suffering for the sins of the older generation, that Herbert Hoover urged the Quakers of America, as members of a sect cherishing the ideals of universal brotherhood, to undertake the gigantic task of feeding and clothing these children until their own country is in a position to care for them. The American Friends' Service Committee does not restrict its charity to Germany, however, but gives aid impartially to the needy little ones of all Central Europe.

The local body co-operating with the Friends is known as the Minnesota Committee for the Relief of German Children. Among the men and women who sponsor its work are Governor Burnquist, honorary chairman; Dr. Maria L. Sanford, honorary vice-chairman; Archbishop Austin Dowling, of St. Paul; and Right Reverend F. A. McElwain, Episcopal bishop of Minnesota. Offices of the committee are at 423 South Fifth Street, Minneapolis, and all checks should be made payable to Robert W. Webb of the Minneapolis Trust Company. Every dollar subscribed is spent by the Quakers on food and clothing. All expenses of distributing have been privately met.

MISCELLANY

DR. WILLIAM EDWARDS

When a medical man who has gained the respect and the love of a large community either by the sacrifice of himself to the public or by his great talent, or by both,—when such a man falls by the wayside, some paper is always ready to give expression to the feelings of those who have been served by the great soul, and freely to acknowledge that the medical profession produces such men in abundance.

Such a tribute was paid to Dr. Edwards by a paper of Bowdle, and we gladly publish it upon request, regretting that the name of the paper is not known to us that we might give it recognition for its graceful tribute to both Dr. Edwards and the medical profession:

DR. WILLIAM EDWARDS CALLED

"Greater love no man hath than that he give his life for a friend."

That is practically what Dr. William Edwards did.

From 1883 until in November of the past year Dr. Edwards faithfully and impartially cared for the sick and afflicted of this community, responding to calls in all kinds of weather and making long and hazardous journeys to administer to the sick.

Two generations, in some instances, were helped into this world by him, and in thousands of cases pains and agonies were relieved by his ministrations. Of iron determination, though not of extraordinary physical strength, he went when others would have declared it impossible to do so, and true to the ethics of his profession he treated all alike, giving his time and attention as freely to the abject poor as to the wealthy—humanity was humanity to him. Throughout the flu epidemic last winter he responded to calls when friends advised him to go to bed himself and doubtless by his attention many lives were saved.

As a business man, he was progressive and did much toward the development of the town and country. As a neighbor he was conscientious, kind and agreeable—a manly man, and as husband and father loving and affectionate.

All that the best medical and surgical skill, and faithful and careful nursing, could accomplish was done for him, but the ravages of disease could not be stayed; and at an early hour Sunday morning, February 8, 1920, he was called to "that mansion not made by hands, eternal in the heavens."

Throughout his illness, which extended from some time in October, until death came to his relief, he maintained a cheerful disposition, and, although from the very nature of the disease (cancer of the stomach) he suffered untold pain, not a murmur was heard from him.

Dr. Edwards has gone, friends, but his many kind deeds, his accomplishments as a fellow citizen, will ever

be cherished in the memory of the people of this community.

William Edwards was born on a farm near Madison, Wisconsin, February 16, 1850, and as a boy experienced the hardships of pioneer life. He attended public schools and after finishing these went to Madison University. Deciding upon a medical career he attended and received degrees at both the Northwestern and Keokuk Medical Colleges. Soon after the Chicago fire he was placed in charge of the Davis Free Dispensary where he performed the duties previously requiring two men to accomplish. He began the practice of his profession at Taopi, Minn., in 1877, where he met Miss Ida L. Wells, whom he married two years later. From Minnesota he came to Dakota territory, establishing himself in practice at Madison. His fame as a surgeon soon spread and he was called to perform surgical operations and in consultations over a wide area, receiving praise for his skill. The Dodgeville, Wis., Chronicle, in a column article describing a very difficult and dangerous operation which he performed in 1878 on a young lady of that city, says it was one of the most peculiar cases on record, and the young surgeon won a "laurel wreath" for his skill. In 1882 the Edwards family settled at Theodore where they remained until 1885 when they moved to Bowdle and where, until a short time before his death, he was active in his profession, making calls sometimes as distant as eighty miles.

In 1892 he was elected state senator from this district, and at the expiration of his term was appointed a member of the State Board of Health. He held all the official positions in the State Medical Association and at the time of his death was president of the Councilors of the Society. He was the first mayor of Bowdle and established the first drug-store in the city. At his death he was a member of the Surgeon's Club, a Mason of the 32d degree, and a member of both the Woodmen and Workmen societies.

Funeral services were held Wednesday afternoon at the Opera House in Bowdle, no church building in the town being large enough to accommodate the great number of people who attended the services, Rev. Brakemeyer officiating. The remains were escorted by members of the Masonic Lodge who also officiated at the burial, Grand Master Judge Burr, of Selby, officiating. People from adjoining towns and from Aberdeen attended the services. Floral tributes were sent in great profusion.

BOOK NOTICES

THE PRACTITIONER'S MANUAL OF VENEREAL DISEASES, WITH MODERN METHODS OF DIAGNOSIS AND TREATMENT. By A. C. Magian, M. D., Ancien Elève de l'Hôpital St. Louis, Paris. Cloth. Price, \$3. St. Louis: C. V. Mosby Company, 1919.

This manual gives a fairly good, concise description of the symptoms and treatment of gonorrhea and syphilis, with a portion of it devoted to tabes dorsalis. The treatment advocated is that usually presented by English authors, namely, Janet irrigations and the use of the urethroscope.

The illustrations of various instruments are good and are illuminating. They are made by A. C. Hol-

born Co. of London. These instruments appear to be well made, and it is pleasing to know that dilators can be purchased in England, since all American firms report an inability to supply them.

The treatments for syphilis, as advocated by the author, come up to the accepted standards of today.

The re-education in locomotion of tabetics is briefly, but, I think, needlessly, described, for it is surely a régime that only a specially equipped institution can carry out.

The book is on good paper, well printed, and has been carefully proof-read.

H. E. MICHELSON, M. D.

ANAPHYLAXIS AND ANTI-ANAPHYLAXIS. By Besredka, Professor at the Pasteur Institute. Translated from the French by Prof. Gloyne, Pathologist of the City of London Hospital for Diseases of the Chest. Preface to American edition by Prof. Vaughan of the University of Michigan Medical School. St. Louis: C. V. Mosby Co. Cloth, net, \$3.35.

This is a small volume of both scientific interest and practical value. A few typical paragraphs will serve as an illustration:

"To sum up, we can produce an anti-anaphylactic condition, that is to say, we can prevent anaphylactic shock from occurring, by the following different methods of injection,—oral, rectal, subcutaneous, intraperitoneal, intracerebral, and intravenous."

"The oral method is least practical of all, because it requires at least one or two days before anti-anaphylactic immunity is established."

"Vaccination by the subcutaneous method, in view of the slow absorption, may be of service in cases in which the injection of therapeutic serum is not urgent."

"Vaccination by the intravenous route is the one we should prefer above all the other methods; it is rapid, certain, and also protects against local anaphylaxis as well as general. As soon as the anaphylactic immunity is acquired, which requires from ten to fifteen minutes, a strong dose of serum can be injected equally well intrathecally, intravenously, or subcutaneously without the patient running the least danger of anaphylaxis."

In the concluding chapter the translator endeavors to summarize the recent literature on this important subject, but it would seem to the reviewer that much better discussions can be found in current American literature.

IGNATIUS J. MURPHY, M. D.

THE NARCOTIC DRUG PROBLEM. By Ernest S. Bishop, M.D., F.A.C.P., Clinical Professor of Medicine, New York Polyclinic Medical School. New York: The Macmillan Company.

Dr. Bishop is a man who has long been connected with the study of narcotics. He has been a member of many committees, has served the American Public Health Association, and is Visiting Physician to many of the hospitals in New York, notably Bellevue Hospital.

In his new work he has aimed to meet a growing demand for the study of drug addiction. The book comprises many of the author's former addresses given before scientific and other societies and in the medical press.

Of course, to the author this problem is a scientific study, and he does not profess to be a specialist, even in the treatment of narcotic drug addiction; but he was brought face to face with the problem so fre-

quently in his hospital associations that it prompted him to write down his observations. Consequently he has no remedy, treatment, or cure to propose. He is writing this book wholly for the advancement of our knowledge and to simplify the narcotic problem. He has taken into account the human side of the addict, and has studied the sufferings, the struggles, and the problems which confront the unfortunate man. Then, too, he considers the physical disease with which the afflicted one suffers.

It is a book well worth having in every man's library, and certainly will improve the usual methods employed by the physician. Dr. Bishop goes down to the fundamental considerations and the nature of narcotic drug-addiction disease. Then he takes up the mechanism of narcotic drug-addiction disease, and incidentally makes a few remarks on methods of treating the addict, branching out into the rational handling of the narcotic-drug disease and its relation to intercurrent disease. He considers it from a legal point of view, the laws of the various states and countries, and comments upon the legitimate use of narcotics in peace and war. He sums up by giving a general survey of the situation and the need of the hour. In the appendix he gives a few human documents which have been culled from patients, noting their experiences, their sufferings, and their cures.

The work is written in an interesting manner, in a very simple way, and it is inexpensive, and should have a very wide circulation. It should benefit not only the physician but the addict as well.

W. A. JONES, M. D.

PRACTICAL MEDICINE SERIES. Edited by Charles L. Mix, A.M., M.D. Volume 2, General Surgery, edited by Albert J. Ochsner, M.D., F.R.M.S., LL.D., F.A.C.S. Series 1919. Chicago: The Year Book Publishing Company. Price, cloth, \$2.50. Series of eight volumes, \$10.00.

The Surgical Volume of the Practical Medical Series contains more condensed information than any medical book of the same size known to the reviewer. It has in a very accessible form many advances developed during the war. It serves its purpose well, namely, to present advances in surgery to the profession, for it literally abounds in new methods and stunts. One can scarcely turn to a page without finding something of recent development. The text is interestingly written and the technic is usually clearly illustrated.

The abundance of material on accidental cases, burns, fractures, etc., should make the volume a valuable one to the industrial surgeon, while there are few pages that cannot be read with profit by any surgeon.

STANLEY R. MAXEINER, M. D.

AMERICAN ILLUSTRATED MEDICAL DICTIONARY. A new and complete Dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Science, Nursing, Biology, and kindred branches; with new and elaborate tables. Tenth Edition, Revised and Enlarged. Edited by W. A. Newman Dorland, M. D. Large octavo of 1,201 pages with 331 illustrations, 119 in colors. Containing over 2,000 new terms. Philadelphia and London: W. B. Saunders Company, 1919. Flexible leather, \$6.00, net; thumb index, \$6.50, net.

Doubtless some physicians think that frequent new editions of a standard dictionary are put forth by the

publishers solely as a money-making enterprise. We believe, on the other hand, that the publishers of the American Medical Dictionary are fulfilling an obligation to the profession by preparing a new edition of this really standard dictionary whenever the progress in medical terms produces enough new words to create in the profession a demand, or, perhaps one should say, a need, for definitions of such terms. Surely, the past year or two have seen enough, hundreds, in reality, of new ones come into medical literature to create an urgent need for their definition.

The new edition (the tenth) fills a great need in the above respect; and its publication furnished an opportunity to add other features to the new edition of real value.

The Saunders Company has done the profession a real service in the publication of this new edition of Dr. Dorland's masterful work.

THE SURGICAL CLINICS OF CHICAGO. Volume 3, Number 5 (October, 1919). Philadelphia and London: W. B. Saunders Company, 1919. Published Bimonthly. Price, per year: paper, \$10.00; cloth, \$14.00.

The October volume contains a number of valuable clinics, most of them presenting one or more quite practical points relating either to diagnosis, treatment, or operative technic. These are stated so clearly and concisely that the reader is apt to carry them away with him almost as vividly as if he were personally present at the actual clinic.

1. Eisendrath discusses "Cystic Degeneration of the Kidney and Kidney Tumors."

Cystic degeneration is always bilateral, although one side may be only slightly advanced at the time of examination; therefore he strongly advises against operation except to check hemorrhage or relieve threatened uremia. Tumors of the adrenals are distinguished from kidney tumors proper only when the two pathognomonic symptoms are present, namely, bronzing of the skin and premature development of the hair and of the genitalia.

2. Bevan strongly advises against radical excision, and invasion of the axilla, in "ulcerating carcinoma of the breast," for the reason that it is impossible to prevent deep-seated infection and danger of secondary fatal hemorrhage from the axillary vessels. He had had several such fatalities. His procedure is to sterilize the ulcerating surface with the actual cautery and remove only the tumor, aiming to get primary union. Later, if possible, he does a radical operation. This, although only palliative, makes life more comfortable, and death is more liable to be due to metastasis. Occasionally permanent cure may result.

3. Kellogg Speed discusses "Problems in Duodenal Ulcers." He presents a gastro-enterostomy, done four years before, which ceased to function, although anatomically perfect, because of recurrence of the ulcer. Closure of the pylorus restores the function of the stoma; therefore he advocates such closure simultaneously with the gastro-enterostomy.

4. Robert H. Herbst presents a patient with carcinoma of the prostate, and demonstrates the method of treatment by radium. The bladder is opened suprapubically, and a number of radium needles are introduced directly into the prostate and left for from twelve to twenty-four hours. If necessary, in from

four to six weeks later, the perineum is opened and the needles re-inserted.

5. H. L. Kretchmer also presents a patient with papillary carcinoma of the bladder, in which radium caused the tumor to entirely disappear in two months. This was in a man seventy-five years of age, and a cutting operation at that age would have carried considerable immediate danger.

6. E. Lyman Cornell mentions three cases in which he did a spinal puncture for the relief of eclampsia. In two there was no effect, but in the third it worked "as if by magic," the patient being asleep in fifteen minutes.

He also discusses "twilight sleep" in obstetrics, and also the identification of new-born infants in a large clinic.

7. Benjamin F. Davis has a very practical and valuable clinic on the management of crushing fractures of the os calcis.

Space prevents more than mention of other clinics by A. J. Ochsner, Major H. A. Potts, Major Albert H. Montgomery, Paul Oliver, Dr. Gatewood, E. L. Moorhead, C. L. McWhorter, Thos. J. Watkins, and Carey Culbertson, all of which, however, can be read with profit.

H. B. SWEETSER, M.D.

THE MEDICAL ASPECTS OF MUSTARD GAS POISONING.

Alfred Scott Warthin, Ph.D., M.D., Professor of Pathology of the University of Michigan, and Carl Vernon Weller, M.S., M.D., Assistant Professor of Pathology, University of Michigan. Cloth. Price, \$7. Pp. 267, with 156 illustrations. St. Louis: C. V. Mosby Company, 1919.

The volume on "The Medical Aspects of Mustard Gas Poisoning," which has recently come from Professors Warthin and Weller of the University of Michigan, may be considered by some as a little out of date, or as having lost its main claim to importance with the ending of the war. To such it will, however, be interesting for its historical value and associations with the great drama of the conflict.

To those who believe that we have not yet entered upon the era of a warless millennium, and that, in another war, poison gases "will be utilized again in a fuller development," this work will give valuable grounds for thought. These authors believe that "gas warfare did not reach its full development in this war," and that "national safety lies in a knowledge of all agents of destruction and the methods of protection against them."

However that may be considered, the book is absorbingly interesting. The first chapter will carry many of us back to those ruins and trenches in France where we acquired such an intimate acquaintance with the clinical aspects of mustard-gas poisoning. In the chapter that treats of the "Medical Aspects of Gassing in Warfare," we have a graphic description of the first use of chlorine cloud gas by the Germans near Ypres, followed by an account of the natures and methods of use of the other most effective German gases, as well as a very brief description of ways that these gases affect the human body. "Mustard gas (dichlorethylsulphide) was first used effectively by the Germans at Ypres on July 12 and 13, 1917," and thereafter it was probably their most valuable weapon.

Mustard gas was very persistent; it lurked in shell holes for many hours or days as a liquid, it easily went

into solution on wet surfaces, it dissolved in fatty substances, and was taken up in the perspiration. All who were at the front will remember cases of mustard-gas burns in soldiers who had touched affected ground or leaned against affected trench walls long after the end of a bombardment. Against the general burns of the skin the masks were, of course, no protection. Against phosgene, chlorine, and other much more fatal gases, the masks gave protection, as they did usually also against the ocular and respiratory tract lesions of mustard gas; but against the general cutaneous lesions protection was very difficult.

After this general chapter the clinical and pathological aspects of mustard-gas poisoning are considered under the heads of the cutaneous lesions, the ocular lesions, the lesions of respiratory and gastro-intestinal tracts, and the general secondary effects in cases of gassing. Especially interesting is the series of photographs of the successive stages of the lesion caused by a standard drop of the liquid dichlorethylsulphide dropped on human skin. The effects on the eyes and on the respiratory and gastro-intestinal tracts were studied not only through the liquid chemical, but also by the gas measured and administered in a very ingenious and simple gas-chamber apparatus.

The clinical pathology and treatment,—preventive, protective, and curative,—are later fully discussed. For the cutaneous lesions, Dakin's solution is strongly recommended, while all oily "air-excluding and infection-including protectives" are condemned. Dichloramine-T was useful in the treatment of ocular lesions.

Throughout the book the illustrations, especially the numerous microphotographs, are extraordinarily clear. The book is an unusually well-written report of a scientific investigation of the highest order.

THEODORE H. SWEETSER, M.D.

NEWS ITEMS

Dr. G. L. Baker has moved from Ada to Austin.

Dr. A. E. Sohmer, of Mankato, is doing post-graduate work in Chicago.

Dr. C. A. Butler, of Redfield, S. D., has purchased the practice of Dr. Baker, at Lake Preston.

Dr. J. J. Link, of Chicago, has become associated with Drs. Roan and Strauss, of Bismarck, N. D.

Dr. Irving C. MacDonald, of Minneapolis, was married last week to Miss Agnes Wanetta Smith, also of Minneapolis.

The American Proctologic Society will hold its twenty-first annual meeting in Memphis, Tenn., on April 22 and 23.

In the reorganization of the law department of the Soo Railway upon the road's return to private hands, Dr. J. H. Rishmiller remains chief surgeon.

Dr. E. L. Tuohy, of Duluth, has been telling the Blackstone Club of that city all about "Medical Jurisprudence"; or, "Carrying Iron Ore to the Mesaba."

Dr. L. G. Rountree, of the University Medical School, soon goes to Rochester, where he will spend six months in work in connection with the Mayo Foundation.

Dr. A. M. Cook, professor of Chemistry in the University of South Dakota, has resigned on account of poor health, and will be succeeded by Prof. A. M. Pardee.

Dr. Alexander R. McDonald died last week in Minneapolis at the age of 69. Dr. McDonald, who was a McGill graduate, practiced in Boyd, Wis., over forty years.

Dr. G. B. Weiser, of New Ulm, has been re-appointed a member of the Minnesota State Board of Health by Governor Burnquist, after a term of three years, which expires June 1.

The General Hospital (formerly the City) of Minneapolis, has divided the city into three districts with a branch office in each district, to which people in that district can apply for medical aid.

A Minneapolis daily paper says that the number of liquor prescriptions written by City physicians in the six weeks following February 1, will exceed 1,400, one physician having written more than 200.

The Hennepin County Medical Society refused to establish a fee-bill, not because it thought prices should not be increased, but because it thought the matter of prices is one for the individual physician to determine.

Dr. W. P. Baldwin, of Casselton, N. D., who has been spending several months in Minneapolis with his brother, Dr. L. B. Baldwin, Superintendent of the University Hospital, will move to Fargo, N. D., and resume practice.

Itasca County has given its county physician, Dr. Thomas Russell, of Grand Rapids, three assistant commissioners: Dr. M. F. Hayes, of Nashwauk; Dr. Edward Seguin, of Bovey; and Dr. J. E. Dufort, of Northome.

The Huron (S. D.) Medical Society met in Huron last week, and heard papers by Drs. John W. Sherman and James E. Reeder, of Sioux City, Iowa, the former on the "Diagnosis of Influenza Complications" and the latter on "Mastoiditis."

Dr. Baldwin Borreson has moved from Warren to Bemidji, where he will become associated with Dr. E. W. Johnson. Dr. Borreson was at

one time a member of the Bratrud Clinic and was later associated with Dr. H. M. Blegen, of Warren.

Dr. Charles Harrison Frazier, Professor of Clinical Surgery, University of Pennsylvania, will deliver an address at the banquet of the Hennepin County Medical Society on Monday evening April 19, preceding the opening day of Minneapolis Clinic Week.

Dr. William O. Hearn, who formerly practiced in Bluefield, W. Va., a city of 20,000, has located in Minneapolis, and has offices at the corner of Lake St. and Hennepin Ave. Dr. Hearn is a graduate of the College of Physicians and Surgeons, of Baltimore.

The Department of Justice of the United States has requested that all the people of the country observe a week, but not the same week, in which the cheaper cuts of meat be used. The week beginning April 12 is named as the "Save Money in Meat" week for Minnesota, the Dakotas and Montana.

The Minnesota Academy of Ophthalmology and Oto-Laryngology, will hold its annual banquet in Minneapolis on Wednesday evening, April 21, during Clinic Week, and no doubt visiting physicians in this line of work will receive invitations. A distinguished speaker will be engaged to address the meeting.

News reaches Minneapolis of the marriage of Lieutenant Colonel A. J. Chesley, of the Minnesota State Board of Health, to Dr. Flacida Gardner, of Los Angeles, Calif. The marriage took place in Poland, where the two are engaged in relief work. They will live in Minneapolis after their work is completed in Poland, which will be in July.

The Physicians' Hospital of Thief River Falls elected the following officers at its annual meeting last month: President, Dr. O. F. Mellby; vice-president, Dr. J. Biederman; secretary, Dr. H. W. Froelich; treasurer, Dr. A. J. Paulson. This hospital gives nurses two years of preliminary training, after which they take a year in the General Hospital of Minneapolis and receive their diplomas.

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AT THE JANUARY (1920) EXAMINATION

BY EXAMINATION

Burns, Dan D. Sioux City Col. of M., 1920
Burman, G. E. U. of Nebraska, 1920

Case, T. J. Rush, 1920
 Cramer, Lloyd L. Creighton, 1920
 DeTuncq, A. E. Marquette, 1920
 Drouin, W. G. Laval U., 1920
 Duncan, Cecil E. Indiana U. of M., 1920
 Eaton, Richard G. Harvard, 1896
 Hannon, Leo J. Washington U., 1919
 Haug, L. A. Northwestern, 1916
 Johnson, George E. Chicago Col. of M. & S., 1918
 Lunn, Jacob O. P. & S., Chicago, 1908
 Matlock, W. L. Nat. U. of A. & S., 1918
 O'Toole, Tom F. Rush, 1919
 Rice, D. B. Louisville, 1909
 Ricketts, Floyd B. Nat. U. of A. & S., 1915
 Rogne, C. O. Rush, 1916
 Sherwood, C. E. Michigan, 1919
 Taylor, James R. U. Col. of M., Richmond, 1907
 Whitehead, E. H. State U. of Iowa, 1904
 Whitehead, Herman J. State U. of Iowa, 1897
 Whitney, Leroy D. Tufts, 1916

BY RECIPROCITY

Haskell, A. I. U. of Minn., 1916
 Jamieson, George V. Rush, 1913
 Newkamp, Hugo. Bower U., Germany, 1898
 Schwartz, Virgil J. U. of Minn., 1919
 Wheelock, D. O. Louisville, 1908

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Apply to Dr. Chas. T. Granger, Rochester, Minn.

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A Packard roadster, in fine condition, recently painted, full equipment, two spare tires. This is a six cylinder 48. Address care of this office.

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One National sterilizer (medium), \$85; one Spencer microscope, \$75; one electric cautery motor, \$50; good as new. Address, Dr. J. T. Leland, Herman, Minn.

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As soon as possible, a married man as associate in general practice in a South Dakota town. Give age, school graduated from, experience, approximate salary acceptable, and when available. Address 324, care of this office.

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An oak office desk with chair, an operating table, bath scales, center table, instrument cabinet, immersion stands, Columbus table, sterilizer, office stool, waste receptacle, and numerous other articles. Many of these are almost new. Address 335, care of this office.

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A physician having a large surgical practice in a good town adjacent to the Twin Cities wants to become associated with a group of medical men or a surgeon in Minneapolis or St. Paul where he can have a larger field to develop his specialty. Can take most of his present practice with him. Address 326, care of this office.

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My practice in a North Dakota village of 800 is offered for sale. It pays \$5,500 a year, and can be largely increased. No competition. Desire to sell before May 1 as I intend to specialize. Price, \$500. Address, 331, care of this office.

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Motion pictures showing the surgical uses of Dichloramine-T will be displayed at the April A. M. A. meeting at New Orleans by The Abbott Laboratories of Chicago. All physicians attending the meeting are cordially invited to see these and other interesting pictures of recent medical and surgical procedures.

ACCURACY REQUIRED IN DIAGNOSIS

Blood chemistry requires technic of the highest grade. A failure in a single analysis, for instance, in the determination of sugar, urea nitrogen, or creatinine, may be disastrous. This is true of other clinical tests as well. Accordingly the most reliable methods are utilized by Dr. I. J. Murphy, of the Minneapolis Diagnostic Institute, in all clinical procedures. For example, in chemical blood analysis the method employed is the one recently perfected by Professor Folin, of Harvard. Any report furnished you by the Minneapolis Diagnostic Institute, whether x-ray, pathological, bacteriological, or chemical, will be found reliable.

PHYSICIANS AND DENTISTS' X-RAY LABORATORY

The above-named laboratory does a limited line of work and does it so well that it has gained the full confidence of the Minneapolis medical and dental professions. It takes only reference work, and it respects the confidence placed in it by professional men.

The laboratory's equipment is such that, with an experienced director, its diagnostic films are altogether dependable.

A call upon or correspondence with the Physicians and Dentists' X-Ray laboratory, Pillsbury Building, Minneapolis, will be profitable to every physician or dentist.

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Benzyl benzoate, which is non-narcotic and non-toxic, has been found to be a scientific substitute for opium and its alkaloids in the treatment of asthma, spasmodic dysmenorrhea, diarrhea, dysentery, and other pathologic conditions. Reports on its use by Dr. D. I. Macht, of Johns Hopkins; Dr. J. C. Litzenberg, of the University of Minnesota, and other careful observers, have shown that its effectiveness cannot be doubted.

Messrs. Sharp & Dohme now put benzyl benzoate up in gelatine globules of five minims each, calling them, for convenience, "Benzylets," with twenty-four in a box.

Such preparations are to be highly commended because they are highly useful.

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Nose and throat specialists who are using Hemagulen, a product of the Lilly Laboratories, are reporting that in using this as a local hemostatic following the removal of tonsils of children, less soreness seems to follow and healing is unusually rapid. This is accounted for by some who say that the active thromboplastic substance of Hemagulen is not astringent to the tissues, aiding merely in producing and accelerating a normal clot by its local application. Hemagulen is prepared

from fresh brain substance, is sterile and is a dated product—therefore should be kept in the ice box. Literature will be supplied on Hemagulen upon request made to Eli Lilly & Co., Indianapolis.

THE CHICAGO LABORATORY

The private laboratory is doing a work for medicine the importance of which can hardly be estimated; and the rapid growth of such laboratories is evidence of this fact. The physician practicing in a remote country town can get almost any test made in ample time to serve his purpose, and all doubt as to the dependability of the test is removed by the reputation of the men conducting at least some of the laboratories,—for instance, the Chicago Laboratory, located at 25 E. Washington St., Chicago, with R. W. Webster, M.D., Ph.D., at the head of the Chemistry Department; Thomas L. Dagg, M.D., at the head of the Pathological Department; and C. Churchill Croy, at the head of the Bacteriological Department. A report signed by such men is worth while.

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Still Rock Spa is a hundred-room hospital located at Waukesha, Wis., for the exclusive treatment of diabetes and Bright's disease. Probably no other diseases respond more readily to institutional treatment than the two named above. There is scarcely one condition in the home treatment of these diseases that cannot be improved upon in the treatment of a well-equipped institution; and not a few conditions in the latter cannot be found in the general home.

Next to and above the physical conditions found in the right kind of institution is the expert medical aid that is the product of special study and wide experience.

Dr. A. J. Hodgson, the medical director of Still Rock Spa, is an expert and an authority in the treatment of these diseases, and may be depended upon to furnish his patients all that expert knowledge can furnish. He invites correspondence from physicians in regard to his work at Still Rock Spa.

MODERN MARTIAL THERAPY

Amid the veritable swarm of new medicinal agents of all varieties that have been introduced to the therapist during the last twenty years, and in spite of the great advances in general medicine during the same period, there has not as yet been proposed any remedy which can successfully compete with iron in the treatment of anemic and generally devitalized conditions. This metallic element, in one form or another, is still the sheet anchor in such cases, and when intelligently administered in proper form and dosage can be depended upon to bring about marked improvement, provided serious incurable organic disease is not the operative cause of the existing blood impoverishment. The form in which to administer iron is, however, very important. The old, irritant, astringent martial medication has had its day, and properly so. Probably the most generally acceptable of all iron products is Pepto-Mangan (Gude), an organic combination of iron and manganese with assimilable peptones. This preparation is palatable, readily tolerable, promptly absorbable, nonirritant and still distinctly potent as a blood builder and general tonic and reconstructive.



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The house now has four preparations, the worth of each of which has been demonstrated beyond a question.

They are the following: Peptenzyme, a powerful digestant; Protonuclein, a combination of endocrine glands to upbuild the patient of greatly lowered vitality; Nephritin, which has produced splendid results in renal disease; and Trophonine, a palatable food of high caloric value and vitamin content for the sick and the convalescent in need of nourishment.

These are preparations of great value and are wholly dependable.

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CASCARA?

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Cascara Evacuant is nearly twice as active as the "aromatic cascara." This is due to a special process employed in making Cascara Evacuant,—a process devised about twenty years ago by a member of the chemical research staff of Parke, Davis & Co. By the use of a neutral solvent this investigator succeeded in removing the bitter glucoside of cascara, without altering the other constituents of the drug.

"Aromatic cascara," as most physicians know, are prepared by destroying the bitter glucoside of the bark by the addition of magnesium oxide or lime. These alkalis destroy not only the bitter glucoside, but, to a certain extent, the other constituents of cascara, as well. This largely explains why the average "aromatic cascara" is only about one-half as active as Cascara Evacuant.

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LABORATORY
SERVICE

Dependability characterizes the work done in this well equipped, modern laboratory. *Routine Laboratory Tests* receive equal attention with the more intricate laboratory procedures, such as *Basal Metabolism*, *Blood Chemistry* and *Wassermanns*, which are featured.

A special study is being made of the relationship of certain systemic conditions, to focal infections in the mouth. All work done by or under the personal supervision of Dr. A. C. Potter, formerly instructor of Pathology and Bacteriology, University of Minnesota, and Director of the Laboratories of the Minneapolis City Hospital.

Northwestern Pathology Laboratory

1128-36 Lowry Bldg., St. Paul, Minn.

Drs. Clark, Hagberg, Simon and Potter

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ALKALOL supplies needed physiologic salts and passes them into the cells, it feeds them. Of proper alkalinity and correct salinity ALKALOL is soothing and healing, overcomes congestion, restores osmotic balance. ALKALOL doctrine is rational, true doctrine whose promise is demonstrated and justified by performance.

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The Meyer Multoscope Combination Stereo-Radiographic Table and Rhinoscope is continuously demonstrating its superiority, whether in the hands of a trained expert, or of the physician or his attendant who has brought to its use the ordinary skill with which all such appliances must be used. Even the novice obtains results with it which are indeed astonishing.

X-ray pictures possess very little diagnostic value unless their interpretation is unmistakable, which is, only too often, not the case; indeed, many such pictures are so deceptive that it would be almost criminal to perform a surgical operation based alone upon such evidence of disease. Any x-ray apparatus should be above suspicion in its results if used for clinical purposes.

The Meyer Multoscope is an apparatus worth knowing. Full information concerning it can be obtained from the manufacturers, the Wm. Meyer Co., Chicago, or their branch office, 627½ Nicollet Ave., Minneapolis.

THE POTTER LABORATORY SERVICE

The establishment of the Northwestern Pathology Laboratory in St. Paul under the management of Dr. A. C. Potter is an event of much interest to the medical profession, for no pathologist in the Northwest is better known than Dr. Potter, who was formerly instructor in pathology and bacteriology in the University of Minnesota, and director of laboratories of the Minneapolis City Hospital. His work in post-mortems and his frequent appearance as expert in our courts have also added to his reputation as a pathologist of very high attainments.

As the head of the new laboratory he will do the profession a great service, for all work done in this laboratory will have Dr. Potter's personal attention.

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The physician who is not in touch and who does not use the private laboratory of today, unless he maintains his own laboratory, can hardly be said to be a modern practitioner.

For detailed information, address the Northwestern Pathology Laboratory, Drs. Clark, Hagberg, Simon, and Potter, 1128-36 Lowry Building, St. Paul.

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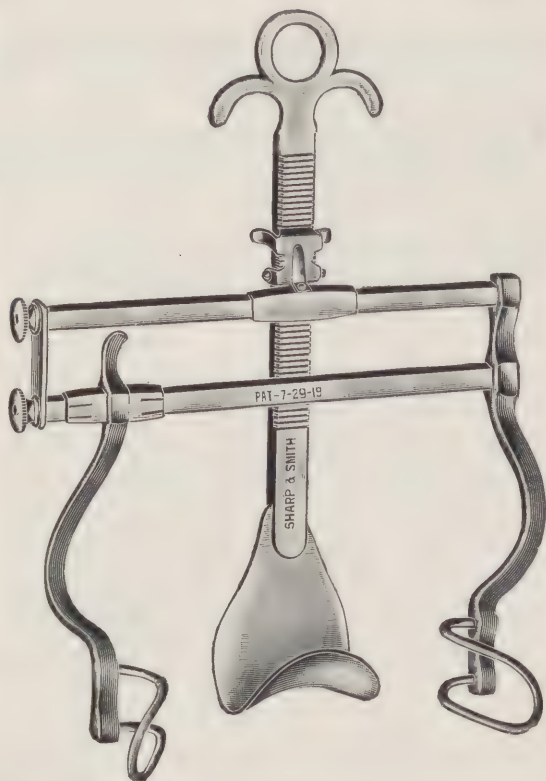
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The Official Journal of the

North Dakota and South Dakota State Medical Associations

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MINNEAPOLIS, APRIL 15, 1920

No. 8

NEUROLOGY AND PSYCHIATRY IN THE WAR*

BY C. R. BALL, M. D.

ST. PAUL

"Neurology and Psychiatry in the War" is rather a pretentious subject for a short paper. I do not, however, intend to discuss such a broad subject as this in general, much less in detail, but merely wish to try to describe that part of it with which I came in contact.

My first assignment in the Medical Corps of the Army was on a Neuropsychopathic Board at Camp Grant. The duties of this Board were various. Its members worked as a staff, examining the large drafts for mental and nervous defects on the days when these drafts were coming in. During the times when there were no "drafts" the Board was usually swamped by the large number of nervous cases which had either escaped their notice in the confusion and rush of the draft examinations or required a more extended period of observation and the changed conditions of military life to make their deficiencies apparent.

At the time I was at Camp Grant this Board was composed of six members. I remember very well our examination of a large draft of negroes from New Orleans and vicinity. The negroes were brought into the examination hall in groups, stripped of all their clothing, and started around each side of the room in two columns, one passing to the right, and the other to the left. In their journey around the room, they encountered all the different medical boards, such as the Tuberculosis, the Orthopedic, the Surgical, etc., whose function it was to examine

them for the various defects pertaining to their particular specialties which would disqualify the candidates for the duties of a soldier. Two members of our Board were stationed at the end of each column, while the remaining two stood a little to one side and received the cases which the examiners, at the end of the columns, considered needed a more thorough examination than they then had the time to give them. The result of this method was a specialist's examination throughout. Each medical group limited and concentrated their search to the defects and diseases with which their specialties had to deal, and paid absolutely no attention to anything else. Our Board looked chiefly for mental inferiority, the various psychoses, especially dementia precox, epilepsy, and gross nervous disturbances, such as tremors, ataxia, and abnormalities in the reflexes. We usually examined three candidates at a time, noting their station, testing their reflexes, looking for tremors, and, at the same time, asking them questions in order to determine whether they were victims of epilepsy and also what their mental status was.

In determining the mental status of a candidate we had continually to make the distinction between simple ignorance, due to an entire absence of education, and a natural lack of intelligence; since a lack of education did not unfit them for the duties of a soldier, while, on the other hand, mental deficiency did.

We asked the negro applicants very simple questions, such as: "Who is President of the United States?" "What is meant by the term

*Presented before the Minnesota State Medical Association October 1-3, 1919, at Minneapolis.

'United States' and where is its capitol located?" Failing to receive satisfactory responses to such questions, we then inquired the occupation of the candidates, and confined our examinations to questions concerning it. In the answers of the negroes to general questions, we very soon observed a marked difference between those who lived in town and those who lived in the country. The town negroes answered fairly well such questions as, "Who is the President of the United States?" "Where is the capitol of our country located?" "How did we happen to come into the war?" etc., while the others were either unable to respond at all or gave very vague and unsatisfactory answers. I did not, however, from their answers get the impression that the town negroes had a greater mental capacity than their brothers from the country, but that this superiority in knowledge was due chiefly to the better opportunities presented by the environment of the former.

Among the negroes who worked in the swamps and on the plantations I stopped entirely the general method of questioning because of its futility, and confined myself to questions concerning their work. With one negro, who did not know who was President of the United States, I tried a different tact, and, looking him straight in the eyes, asked him if he had ever heard of a man by the name of Woodrow Wilson. He thought a minute and then inquired: "Is he a white man, Sah?" When I told him that he was, he shook his head in a disappointed way and said: "No, Sah, I guess I don't know that fellah."

I was much impressed at the frequency of epilepsy among these Southern negroes. They all knew perfectly well what "fits" were and had a very definite and good term for describing them. If a negro man had "fits" he spoke of them as "falling out" and if you asked him if he ever "fell out" you were always sure of his understanding at once what you were inquiring about.

The draft was like an immense dragnet cast out into the sea, which, when pulled in, scooped up everything in its path—good, bad, and indifferent. The work of sorting out the contents of the great catches of this vast net was one of the very important duties of the Medical Corps and especially so of that part of it called the Neuro-psycopathic Board.

The large number of individuals who were unable to learn the drill commands, those who

manifested such peculiarities of conduct and thought that they attracted the notice of their comrades or superior officers, the so-called conscientious objectors, pacifists, and pro-Germans, were brought before this Board to have their mental status and moral accountability passed upon. It was good work, and required keenness in diagnosis, as well as quickness in decision and judgment. I never realized before the large number of persons who are either mental defectives or who are devoid entirely of mental equipoise and balance, and yet have the right of suffrage and equal participation with the rest of us in the affairs of our government. This fact alone depressed me very much at the time, and never ceases to depress me when I think of it. With this ever-increasing horde of voters—and the ignorant and mentally defective in the North, where they are permitted to vote, seemed to be about as numerous among certain classes as they were among the negroes in the South who are not allowed to vote—I wonder how long we are going to be able to maintain principles of sanity in our form of government.

Ever since my experience with the Neuro-psycopathic Board at Camp Grant the thought has been borne in upon me that we in the North have not managed our suffrage question as wisely as our fellow-citizens of the South. This question, in a certain sense, is a medical one and one which our profession should recognize as such and lend all its influence towards solving in a satisfactory manner. Let the Volunteer Medical Corps of the Army, who rushed in so unselfishly by the thousands at the call of patriotism and duty to make the world safe for democracy, realize that their work is not yet done, in fact, that it has only begun and that their need now is even greater than it was before the signing of the armistice, to continue the fight, in order that democracy,—the democracy of our forefathers and our constitution, the democracy that we fought in France to preserve,—shall be made safe for the world. At this very minute the mentally defective and unstable elements all over our country, led and incited by unprincipled and selfish leaders, are fighting with the clear-headed and sane-thinking people for supremacy. The saving of our form of government in the near future is going to depend upon whether or not safeguards and limitations are thrown around the right of suffrage. If we wish to go on safely and successfully and continue our reputation for having the best form of government the world

has thus far ever seen, intelligence and mental tests, before granting this right to each person as he or she becomes of age, must be required.

One day while engaged in examining a large draft, I received my orders to go to France. Practically my first assignment there was as an observer at Base Hospital 117, situated at a place called La Fauche. Base Hospital 117 was a special hospital for shell-shock cases in the American Expeditionary Force. Before going to France, although I had read much about these cases, I was still somewhat confused in regard to their proper classification. I did not know whether they should be enrolled under the title of neurasthenia or psychasthenia; whether they were to be considered as strictly functional in origin; or whether, due to the tremendous impact caused by the bursting of a high-explosive shell in close proximity to the victim of this apparently strange malady, the nervous system was given such a shock that certain minute changes in its elements were set up, thus creating a new symptomatology and a new medical entity. The war had already astonished us with so many new things that it would not be surprising if it gave us a new disease. So some of the first questions I asked, when I began meeting my brethren among the neuropsychiatrists in France, was concerning the nature of shell shock. Was there anything new in its symptomatology from that which we had seen before? etc. To these questions, they all shook their heads and said: No, there was nothing new; it was the same old thing we had been seeing at home, only transplanted to a different environment and with apparently a different and more intense etiology, thus causing more severe clinical manifestations.

Whoever originated the term "shell shock" and applied it to the type of cases which it was universally applied to, ought to be court-martialed and shot at sunrise if the trouble which this name has caused is to be any criterion to judge of the degree of punishment deserved. The term itself is perhaps responsible for as many or even more cases of this malady than high-explosive shells ever were. I am not speaking now of those cases which were temporarily disabled by actual shell-concussion, and there were a large number of such cases. Neither am I referring to the cases which, as a result of the severe conditions of life caused by the war, the intense nervous strain, the continual hardships, and perhaps an attack of influenza, broke down completely nervously, as we often see happen in

cases of neurasthenia or nervous prostration under stress in civil life at home. Such cases are in a different category altogether. They have nothing in common with the true shell-shock case.

In order to understand its symptomatology and nature, let me first quote Babinski's definition of hysteria. Babinski says hysteria is a pathological state manifesting itself by symptoms which it is possible to reproduce by suggestion in certain individuals with a perfect exactitude, and which are susceptible of disappearing under the influence of suggestion alone. This definition explains the "shell-shock" cases as I saw and understood them. They were cases of hysteria, pure and simple. I well remember my first introduction to one of these cases. As I got off the train at the little French village where this hospital was located, the only familiar object which met my gaze with a single, solitary, forlorn-looking soldier in an American uniform, who had evidently come down to the station to watch the train go by. Not being able to see the hospital from the station, I asked this soldier if he could direct me to it. The effect of my question was startling. He began to sputter and choke, at the same time emitting inarticulate sounds and going through a series of apparently involuntary contractions. After watching him for a while I got a sensation as if I was choking myself. However, in what seemed like a long time to me, but was in reality only a few seconds, the whole situation cleared up. This Doughboy was simply going through the preliminaries which seem necessary to a stammerer before he begins to talk. He was a patient in the hospital, and when he finally got through his prodromal stage he told me he was going there himself and, if I would accompany him, he would show me the way.

On the way to the hospital I asked my soldier-guide the nature of his trouble. I could almost see him swell up with pride as he answered: "I got shell shock, sir." I asked him what kind of a disease shell shock was, and if it was something new. His answer was, I think, quite characteristic of the idea concerning it, which its victims usually had at that time. He said, shell shock was a disease caused by being near shells when they burst. He spoke of it as one might speak of typhoid fever or diphtheria, only in addition there was a visible pride manifesting itself in having acquired this affection as a

soldier on the Field of Honor, and also that it was something new and unlike any other disease.

When I arrived at the hospital I saw hundreds of these cases who also seemed to be somewhat "stuck up" because of their affliction, and, strange to relate, they all, or nearly all, had the same identical symptoms. They all stammered and twitched exactly alike. It was a veritable tarantella, comparable to that which spread in a wave of hysteria over Europe during the 16th Century, only, instead of being a dancing wave, as that was, this was a stammering and stuttering wave, which had apparently engulfed the entire hospital.

After talking with some of these patients for a while, I felt a mad desire to stammer also.

The shell-shock cases may be well compared with the cases of self-inflicted injuries. In the cases of self-inflicted injuries, as they approached by degrees closer and closer to the front, and the dangers and hardships of it began to sink into their souls, the instinct of self-preservation arose and for the time being, at least, overpowered them. Their mechanism of defense asserted itself, and they sought some means of getting out of the inferno they were in and still save themselves from a court-martial and dishonor. So they chose the plan of shooting or stabbing themselves in such regions as the extremities, where the wounds would not prove serious, but would be severe enough to send them back from the active combat duty to the hospitals. The shell-shock cases may be considered as the working of the same defensive mechanism, manifesting itself, to be sure, in a different manner, but accomplishing the same thing as the end-result. Suggestion, both auto and hetero, was the cause of all their symptoms, such as mutism, deafness, the various paralyses, stammering—in fact, all of the protean symptomatology occurring in the shell-shock cases.

As suggestion was their cause, it was also the basis of their recovery. It is a well known fact that hundreds of them got well promptly after the signing of the armistice. The members of the Medical Corps in charge of the shell-shock ward at Savenay told me that it was amusing to note the long list of symptoms with which these patients came into the hospital on their journey home. After it had been explained to them very plainly that they could not return home as long as they were sick and that they would have to remain in the hospital there for treatment until they had fully recovered, it was astonishing how quickly their symptoms all disappeared.

A true shell-shock case then is not neurasthenia or psychasthenia, neither has it anything to do with shell concussion, strictly speaking. It is an hysterical condition, pure and simple, and fulfils in every aspect Babinski's definition of that term. Schwab, who was the medical director of Base Hospital 117, describes these cases well when he says of them that they were physically and mentally fit and yet unfit. Shell shock was plainly a disease of the soul. The severity of these shell-shock cases varied naturally just as the dangers and hardships were the less or the more intense and also according to the degree of human frailty found in different individuals.

To say that fear was at the foundation of the shell-shock cases does not explain it properly. Every soldier must, at some time or another, have felt fear. The question as to whether this fear was going to make a shell-shock case or not, was simply the question, as Irving Cobb puts it, whether the soul of the soldier was strong enough to drag his trembling body up into the midst of it and hold it there. Whether his ambition, pride, self-respect, and patriotism were more precious to him than life itself.

We know, however, that in many of these cases after the nature of their condition had been explained to them and the state of panic into which they had been suddenly thrown by the horror of their environment had passed over, their souls again gained control, and they went back to the front lines and carried on there as good soldiers.

While at La Fauche I received orders sending me to a Paris hospital as neurological consultant in the surgical service. The neurological work here was concerned chiefly with the examination and care of the organic injuries to the nervous system, such as the brain, spinal cord, and peripheral nerves.

In all cases where the field-card indicated a skull fracture, the wounded were given a very thorough neurological examination, whether they had any symptoms or not—in the latter cases with the idea that this examination would prove to be a valuable record later on in case of the development of remote symptoms. The large number of such cases in which the x-ray reports showed fracture of the skull, with an entire absence of any symptoms except subjective ones, is worthy of mention.

Among the spinal cord cases, injuries of the cauda equina were not uncommon. Such injuries were generally the result of rifle and machine-

gun bullets penetrating the sacral canal and becoming embedded there. The worst features about the cauda injuries were the loss of bladder and rectal control.

The method of determining the peripheral injuries among the incoming wounded was very simple. We usually endeavored to meet them as they came into the receiving ward. Here we went from one patient to another, rapidly testing the sensation in their hands and feet, also requesting them to attempt a few movements, such as closing the hands, spreading the fingers, extending the wrist, and flexing and extending the toes. In this manner we were not only able to determine the presence or absence of a peripheral nerve paralysis, but, also, the nerve or nerves involved. The cases where nerve injuries were found were placarded as nerve cases, and the next day sought out in the various parts of the hospital where they had been distributed and thoroughly examined.

In addition to certain specific questions, as to the sensation felt when hit, the degree of pain, and its location and character, a complete report concerning the atrophy, sensory involvement, motions now present, circulatory and vasomotor changes, reflexes, and muscular excitability, both mechanical and electrical, was made in every case. These records were made with the idea that they would accompany the patient on his journeys from one hospital to another, and form a definite basis of judging of the degree of improvement which had occurred in the case at any subsequent examination. They would greatly aid in deciding later on as to whether nerve suture was indicated or not. Unfortunately, in transferring these cases from one hospital to another, most of their records were lost.

In all the cases the reply in regard to the sensation felt when first hit was substantially the same. They all said, their arm and hand, or foot and leg, as the case might be, felt numb and dead, instantly. Pain at the time was seldom complained of. The character and location of the pain after the first sensation of numbness had passed away was both interesting and instructive. We always knew, of course, from the external wound, approximately the location of the nerve injury. It was seldom that the patient ever complained of any pain at the seat of his injury. If, for example, the median nerve was injured between the shoulder and elbow, the pain complained of was almost sure to be felt in the hand and fingers. The location of the pain in the

distal terminations of the nerve seemed to be the rule, no matter how far distant from these terminations the point of injury was located. This was quite characteristic of the nerve injuries in all cases. The nature of the nerve pain was also very characteristic. It was entirely different from the painful sensations complained of in the injuries and subsequent inflammations in the other tissues of the body. The patients spoke of the pain in their extremities when the nerves were injured as either burning or like the jabbing pains of pins and needles, or sharp, shooting sensations. Also, sensations of either heat or cold or of something cold wrapped around the part affected, were often complained of. I believe these two qualities of nerve pain, its location in the distal terminations and the character of it, should be regarded as pathognomonic of nerve lesions. Of course, there may be aching where a nerve is directly affected, and probably usually is, but where a neuritis, as, for example, of the brachial plexus is suspected, aching alone without any evidence of the peculiar qualities of nerve pain and the various perverted sensations accompanying it, should cause one to be suspicious of such a diagnosis. These qualities of nerve pain should be considered as very important aids in differential diagnoses concerning nerve injuries and inflammations.

Severe causalgias were not infrequently encountered. In such cases almost invariably, if the nerve was sufficiently exposed in the region of the wound, blood clots and pus pockets making pressure upon it or an inflammatory mass in which it was caught were discovered. Freeing the nerve and relieving the pressure upon it most always mitigated the pain to some extent, but the most satisfactory method in dealing with such cases was found to be after relieving the nerve to go about 2 cm. above the seat of the lesion and inject 1 c.c. of a 50 per cent solution of alcohol into the nerve trunk. This plan stopped the pain in a miraculous manner immediately without increasing, to any appreciable extent, the already existing motor paralysis. I believe in many exceedingly painful and chronic conditions met with in civilian practice this means of relieving pain has a field.

The war experience with these nerve injuries, where the nerves were not completely severed, even where the paralyses were very complete for some considerable period of time, has shown the tendency in general to be towards a fair degree of recovery. Madame Athanassio Benisty, in her

book, "The Treatment and Repair of Nerve Lesions," says that injured nerves regenerate spontaneously in about 70 per cent of all cases. I do not intend to discuss nerve suture, for it is strictly a surgical subject, but I wish to say, in passing, that the surgeon should take every means of assuring himself that the hope of a spontaneous regeneration is out of the question before resorting to nerve suture.

One of the interesting things concerning the mental cases which I saw was that, in many of them, their mental condition seemed to have been largely traceable to their environment. We are so apt in mental conditions to place too little emphasis on the importance of environment and too much on that of inheritance. My war experience will cause me in the future to have a much greater regard for the influence of environment than ever before. The isolation from family and friends, the severe strain, the brooding over what seemed to the soldier at the time as unjust and harsh treatment, the failure to make good in the army, the chaffing of comrades, and insufficient diversion, were some of the factors which seemed to have played an important part in the etiology of the mental cases.

The consultation cases in the neurological service were exceedingly diverse. The neurological clinic was somewhat of a dumping-ground for all of the other medical departments. The man who complained continually of a pain in his back generally went the rounds, passing through the hands of the urologists and orthopods, and, after a while, when no one else seemed desirous of claiming him, he was turned over to the Neurological Service, as being nervous, as a matter of course. It seemed as if all patients in whom no positive diagnosis could be made eventually found their way there. The diagnosis of nervous diseases appeared to depend, in many instances, on whether any other diagnosis was possible. If not, that settled it. They were neurological cases. I often thought of suggesting that the neurological department be converted into a triage so that all cases would go there first, have the nervous ones sorted out, and then the remaining sent to the various clinics according to where they belonged. It would have simplified the work and tended to prevent the general application of a nervous mantle to those numerous cases in which the diagnosis was obscure. I always knew that nervous diseases, like charity, often covered a multitude of sins, but I did not realize that the mantle was also shelter-

ing such a multitude of other cases, but this is another subject.

I have briefly discussed the neurology and psychiatry of the war as I had the opportunity of seeing it; and as this was my topic I will stop. There are many other phases of it which I would like to take up, but these are subjects in themselves and must be reserved for another time.

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DISCUSSION.

DR. C. E. RIGGS (St. Paul): I am very sure that we have all very greatly enjoyed the exceedingly clever description of Dr. Ball's experiences in the American Expeditionary Force.

If time permitted, I should like to discuss nerve injuries and shell shock, nerve injury, the life impulse of the peripheral nerve and its regenerating power, for this is a miracle fascinating in the extreme. As to the etiology, or pathology, or perhaps the psychology of shell shock, I am entirely in accord with the opinion of Dr. Ball. Shell shock is as old as war itself. I remember a few weeks ago taking up a book called "The Nurse and the Spy," which was published in 1865, and in it I saw a classical description of shell shock, corresponding in every way with the clinical syndrome that this great war has made us so familiar with.

The outstanding thing of Dr. Ball's paper which has made it so interesting to me is, that suffrage is a medical problem. It certainly is. There were 40,000 soldiers discharged from the American army because of nervous and mental deficiency, a number equivalent to all similar cases in institutions in both New York and Massachusetts. Ten thousand were discharged because of psychopathic taint; 3 per cent were epileptic, 3 per cent were alcoholic, 70 per cent were morons, and you are aware of the statement that 12 per cent of the soldiers in the various cantonments in this country were put there because they were unfit to send across the seas. Here is a vast amount of material ready for the hands of the radical agitators. These are perilous times. Do you know that it seems to me that this whole nation is suffering from shell shock? These disorders are more dangerous to this republic than all the plans of the German military staff. I would like to call to your mind that famous painting of Millet, "The Man with the Hoe," and also at the same time the interpretation in the poem of Edward Markham, that the man with the hoe was the slave of economic and sociological conditions. You will remember that face,—recall it, won't you? What was the expression on it? The expression of an imbecile. So the man with the hoe was the product, not of environment, but, rather, of heredity. Now, there were 5,000,000 soldiers examined during the war, and when you think of the vast amount of pathologic conditions, mental and nervous, and then think if there were to be similar examinations of the remainder of the populace, the figures would be simply appalling. I think Dr. Ball was right; the privilege of suffrage is in reality a medical problem.

ETHMOIDITIS*

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The ethmoidal air cells are, primarily, extensions or evaginations of the nasal mucosa from the middle, superior, and first nasal meatuses. The initial ethmoidal out-pouchings are in evidence as early as the fourth month of fetal life. By the seventh month the evaginations have taken shape in the form of hollow, somewhat tubular, blindly ending sacs, with ostia in communication with the points of initial outgrowth. These tubular sacs may now be truly said to be ethmoidal cells.

During the childhood stage the lateral masses become more or less honeycombed or labyrinth-like by the developing cells. In the formation of the ethmoidal labyrinth there is no uniformity of development.

There is an early division, topographically, of the ethmoidal field into two groups: the anterior and the posterior. The anterior cells develop from points inferior to the attached border of the middle turbinate and vary in number from two to eight, and the posterior cells develop from points superior to the attached border of the middle turbinate and vary in number from one to seven.

During childhood the posterior ethmoidal cells gradually pneumatize and make shell-like the middle turbinate. Even before puberty the cells may extend into the supra-orbital plate of the frontal bone and into the infra-orbital plate of the maxilla, and, as early as the tenth year, make extensions into the body of the sphenoid bone and the maxilla, the latter simulating a duplicated maxillary sinus. Such ethmoidal-cell extensions, however, never normally communicate with either the sphenoidal or the maxillary sinuses.

The great complexity of the adult ethmoidal labyrinth and the variations in size, shape, and disposition of the individual cells composing it, are in accord with the early anatomy and the development.

The fully developed ethmoidal labyrinth occupies all that portion lying between the two lateral plates of the orbit. It is composed of two capsules, with a partition between, and occupies approximately one-half of the entire space between the floor of the nose and the cribriform

plate. A horizontal section of the entire labyrinth shows that it is broader behind at its junction with the sphenoid than in front where it is in relation to the frontal sinus. This is important to remember while operating. One must, however, bear in mind that almost constantly the ethmoidal labyrinth extends beyond one or more of the true boundaries of the ethmoidal field.

It is impossible in very many instances to judge, merely from its position, whether a cell belongs to the anterior or the posterior ethmoidal group. It is the location of the ostium rather than the body of the cell that determines its classification, the anterior group draining into the middle meatus and the posterior group into the superior meatus.

The osseous boundaries of the ethmoidal cells are not infrequently defective; particularly are dehiscences common in the orbital plate of the ethmoid bone. Specimens have been observed in which the mucous membrane of the ethmoidal cells was in actual contact with the dura mater. The importance of these dehiscences in the spread of infection from the ethmoidal labyrinth to the tissues of the orbit and the meninges must ever be kept in mind by the operator. Also it is extremely common to find that the osseous wall between certain of the anterior ethmoidal cells and the lacrimal fossa is congenitally deficient.

In the frontal group one or more of the anterior ethmoidal cells not infrequently encroach upon the lumen of the frontal sinus to such an extent that they are ethmofrontal cells. Occasionally they cause the nasofrontal duct to pursue a tortuous or serpentine course, and so restrict the duct and ostium of the frontal sinus that its drainage is very much impaired. It is particularly these cells that must be ablated in the endonasal surgical approach of the frontal sinus.

Some more usual and moderately sized posterior ethmoidal cells extend into the body and lesser wing of the sphenoid bone over the sphenoidal sinus, and may extend sufficiently far to come into very intimate relationship with the optic nerve at the optic foramen and for a considerable distance in front of it. The lamella of bone intervening between the mucous membrane of the ethmosphenoidal cell and the optic

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nerve is not infrequently reduced to a tissue-paper delicacy. The importance of this must be thought of in connection with blindness of nasal origin.

PHYSIOLOGY OF THE ETHMOID

The function of the ethmoid cells is entirely different from that of the sinuses proper. In the first place the anatomical configuration of the two structures is totally dissimilar. The ethmoid labyrinth may be likened unto a sponge, and exercises great influence on the warming and moistening of inspired air.

The air, on inspiration, describes a half circle on passing through the nose. It first impinges on the anterior end of the middle turbinate, and is divided into two streams; one passes through the olfactory fissure, the other, which is smaller, passes beneath the middle turbinate.

BLOOD SUPPLY

The ethmoid obtains its blood supply from the superior nasal branch of the sphenoplatine, as well as the anterior and posterior ethmoidals, which spring from the ophthalmic artery.

VENOUS ANASTOMOSES

The veins are divided into two groups: first, ethmoidal veins returning along the courses of their respective arteries and penetrating the anterior and posterior ethmoidal foramina, which empty into the cavernous sinus; and secondly, the ethmoidal veins on the cribriform plate, which anastomose freely with the veins of the dura mater and the superior longitudinal sinus. This explains why thrombosis of the longitudinal and cavernous sinus can occur from purulent ethmoiditis. It also explains why cases of meningitis following ethmoiditis have occurred without the intervening bone being affected.

NERVE SUPPLY

The nerve supply is from the anterior and posterior ethmoids and branches of the sphenopalatine.

ANATOMY

If we look under the middle turbinate we find the following important structures from before backwards: first, the uncinate process; second, the hiatus semilunaris; third, the bulla; fourth, ethmoid cells; fifth, sphenoid.

The uncinate process is part of the ethmoid capsule, is sickle-shaped, and forms the anterior wall of the hiatus semilunaris, and also helps to form the inner wall of the antrum.

The hiatus semilunaris is a more or less shallow

curved duct situated between the uncinate process and the bulla, and is covered in normal cases by the anterior third of the middle turbinate. It has no constant width, but has a larger diameter in the depth than superficially, becomes wider as it extends downward, and its widest part is in direct relation to the maxillary ostium. The upper end, because of its funnel shape, is called the infundibulum. This leads into the frontal sinus in two ways according to Hajek: first, by direct continuation; second, by ending blindly, but the continuation of the canal occurring immediately to the inside. According to Skillern the latter is the more common.

The bulla is an elevation caused by an ethmoid cell, and forms the posterior wall of the hiatus semilunaris. It varies in size, in some cases becoming very large. Superior to the bulla are the anterior ethmoid cells and frontal sinus; back of these are the posterior ethmoid cells; and posterior to these is the sphenoid sinus.

The ethmoid cells are lined with ciliated epithelium. At different positions of the body some of the ostia of the cells are at their lowest point, so that under normal conditions the sinuses are capable of self-drainage.

Suppurative inflammation of the sinuses is in most cases the direct result of bacterial invasion, and, if caused by a single micro-organism, it soon becomes a mixed infection. The size of the sinuses, profuseness of secretion, and virulence of the infection can exercise great influence on the severity or duration of pain.

Most of our sinus troubles are brought on by repeated attacks of colds, which cause the mucous membrane to become edematous and hyperplastic; when the patient is lying down the blood pressure is higher in this locality with consequent swelling and temporary occlusion of the ostium. The sinus mucosa, in the meantime, is absorbing the oxygen which is contained in the sinuses, but, as no more can enter, there results within a condition of negative pressure, with swelling of and transudation through the mucous membrane; after a time, however, the ostium again becomes patulous, but the membrane does not have time to fully regenerate before the ostium again becomes occluded through the same causes. This constant swelling and irritation produces inflammatory tissue changes which deprive it of a certain amount of vitality, thus causing it to offer a suitable culture medium for bacteria the first time the patient contracts a severe cold.

The subject then resolves itself into a question of drainage and ventilation. Headaches resulting from sinus affections are among the commonest and, at the same time, the least understood of all the symptoms associated with the disease. The mere absence of headache proves nothing, while its presence may be of inestimable value in making a correct diagnosis. Many cases of sinus disease with slight nasal symptoms go through their entire life with a diagnosis of chronic headaches, taking all manners of cures, without it ever occurring to the doctor that the headache might be caused by diseases in the accessory sinuses.

Many of these cases are instantly relieved by the application of cocaine and adrenalin, which open the passages, giving drainage and relieving pressure.

In the chronic form, headaches are an inconstant symptom, the violence of the pain having apparently no relation to the severity of the disease. In certain cases the pain will be almost unbearable, yet the actual symptoms are insignificant; in others the headache is mild, yet enormous tissue changes have taken place.

In certain cases intervals of complete rest are observed between the attacks of pain, and not infrequently headache manifests itself at certain times of the day, lasting a few hours, then vanishing as quickly as it appeared, only to return at the same time the following day. The pain in these cases usually appears in the forenoon and lasts several hours. In some of the chronic forms the patient may be relatively free from discomfort for days and even weeks at a time.

The headache is intensified by constipation, straining, stooping, sudden jarring (as jumping on the heels), use of the eyes, mental work, and loss of sleep. Sometimes the pain will become so great as to excite suicidal tendencies.

In ethmoidal sinusitis there is, generally, a dull pain between the eyes, and it is usually accompanied by a sense of weight over the vertex. In the frontal cells the pain is apt to be limited to the supra-orbital region and is usually a dull heavy sensation, while the sphenoid generally has excruciating pain through the temples, extending into the mastoid process and even the middle of the head and over the vertex. This sinus with the posterior ethmoid cells also causes varying degrees of pain in the occipital region.

Manifestations of dizziness and vertigo are frequent symptoms. Dizziness is often more marked on stooping over to pick up something

from the floor or on a sudden motion of the head.

If pus is seen coming from under the middle turbinate it is either from the anterior ethmoids or the frontal sinus; if coming over the posterior end of the middle turbinate it is either from the posterior ethmoid or the sphenoidal sinus; on the other hand, if no pus is seen it is no proof of the absence of sinus disease.

The consistency of the secretion may change from time to time, depending upon the attacks of acute coryza, the state of the weather, etc.

Sinus disease may be divided into two classes: acute and chronic. In the acute stage the mucous membrane presents the ordinary symptoms of acute inflammation. During this stage the naris on the affected side is often bathed in thick, creamy pus. As the acuteness subsides the inflammation tends to localize itself more and more in the regions of the ostia of the affected sinus.

In the chronic form the inflammatory changes are localized to the regions where the secretion from the diseased cavities comes in direct contact with the nasal mucosa. These changes take the form of hypertrophy and atrophy. Generally at the point where the inflammatory exudate first makes its appearance hypertrophy is usually present, while further below atrophy is the rule.

Under certain conditions purulent sinus inflammation will give rise to the formation of mucous polyps. They are situated around the ostia of the inflamed sinuses, and recur after extirpation unless the purulent process is cured.

The x-ray is of little value in the diagnosis of ethmoidal disease. In the acute stage the patient should be given the treatment of a general cold, together with the shrinking of the nasal mucous membrane, the use of the suction-pump, and a nasal oil.

If under this treatment the condition is not relieved it will be necessary to open the cells. Ofttimes the mere breaking over of the middle turbinate will give drainage and immediate relief.

In the chronic cases drainage and ventilation are all-important. This is gained by correcting deflected septums, removing polyps, and exenteration of the ethmoid cells, together with the frontal and sphenoidal sinuses. Always remember that the turbinates are the protectors of our lungs and that under no circumstances are they to be removed.

SURGICAL TREATMENT OF THE ETHMOID*

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When we come to the operative treatment of the ethmoids, we must keep in mind not only our anatomy, but the important part the turbinates play in the physiology of the nose.

I have been much interested for the past ten years in conservation of the turbinates. About that time, I read a paper on "Conservation of the Turbinates" before the Illinois State Medical Society and later before the American Academy.

In 1912, at the Harvard Medical School, Dr. Mosher demonstrated to me his ethmoidal operation. Since that time I have been working along these lines, and for years I have been operating on the ethmoid capsule with the technic I shall explain to you. During these years I have per-

not only poor surgeons, but will find ourselves in serious trouble.

Whenever the surgery of the ethmoid labyrinth has been presented before the societies that I have attended, very much stress has been placed on the uncinat process, the infundibulum, the bulla ethmoidalis, the hiatus semilunaris, the agger nasi cells, and the accessory cells of the sphenoid, orbit, middle turbinate, and the crista galli, to say nothing of the extreme danger of meningitis and opening into the orbit. I am not surprised that the majority of us are satisfied to

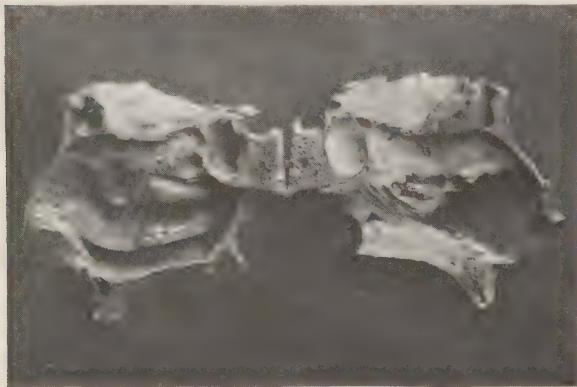


Plate 1. A specimen showing the middle and superior turbinates as a strong wall on the septal side of the ethmoid capsule. This operation does not interfere with any part of this wall. It also shows how directly back of the ethmoid capsule lies the sphenoidal sinus.

formed between two and three hundred of these operations. Frequently, it was necessary to operate on the septum first. I am becoming more and more convinced that in the unequal passage of air through the nose, caused by some malformation of the septum, is the beginning of the majority of our nasal troubles.

The sacrifice of the turbinates is absolutely unnecessary. We can open the antrum, frontals, ethmoids, and sphenoids intranasally without injuring these important structures.

We have had a number of slides made that not only make clearer than our explanations the anatomy of this region, but make us able to orient ourselves and become a living part of our operative field. Without this faculty, we are



Plate 2. A specimen showing the anterior and posterior ethmoidal and sphenoidal sinuses in their position, and how they lie directly back of each other. The nasofrontal ducts are shown with an anterior cell in front of one of the ducts, the removal of which makes a wide opening in to the frontal sinuses.

remove the anterior end of the middle turbinate or turn the patient over to one of our colleagues. In my opinion there are a number of points to know and remember, and I shall name some of them.

1. The anterior and posterior ethmoid cells comprise the so-called ethmoid capsule and are present at birth. Calling as we do the ethmoid labyrinth that portion lying between the two lateral plates of the orbit, seems to me not only a misnomer, but very confusing. We occupy ourselves with one ethmoid region at a time, and, as this consists of a maze of cells, it can rightly be called the *labyrinth*. We could still retain the name *capsule*, but call the cells lying within the capsule the *ethmoid labyrinth*. The ethmoid capsules are separated from each other by two

*Presented before the Hennepin County Medical Society April 5, 1920.

nasal spaces and the septum, and these spaces should not be included in the ethmoid labyrinth.

The later development of the frontal and sphenoid are seemingly an extension of the ethmoids, and are so placed as to be easily treated surgically after exenteration of the ethmoids.

2. The cribriform plate, or olfactory fissure, is entirely outside of the ethmoid capsule, and if the middle turbinate is left in place there is practically no danger if the operator has a careful and delicate touch.

3. We should be able to visualize our operative area; and to do this, we must know our anatomy.

The majority of the operators who have written in the past on surgery of the ethmoid have advocated the removal of the middle turbinate or a portion of it. I have not as yet found it necessary to remove any part of the middle turbinate in order to exenterate the ethmoids or open the frontal or sphenoidal sinuses intranasally.

In my opinion, the principal cause of ethmoid trouble is some abnormality of the septum, and we must operate the thick as well as the deflected septa, restoring not only ventilation, but equal distribution of air. Whenever the septum interferes with the ethmoidal operation, it should be operated on first.

In my clinical work at the University of Minnesota, I find anterior ethmoidal trouble when the frontal sinus is affected, and generally disease of the entire ethmoid capsule when the sphenoid is involved. So we see that the ethmoid is the gateway to these troublesome sinuses.

When we visualize our sinuses, we find the lower part of the frontal in front of the anterior ethmoid. Back of the anterior ethmoid and a trifle lower lies the posterior ethmoid, and back of the posterior ethmoid and a trifle lower is the sphenoid; therefore, if we start in at the anterior ethmoid and work backward horizontally, we come finally to the posterior wall of the sphenoid. We can roughly measure to the posterior wall of the sphenoid by measuring the distance from the end of the nose to a point on the temporal side of the head, half way between the temporo-orbital edge and the auditory orifice. Marking our patient at this point and knowing the average anterior and posterior measurements of the ethmoid labyrinth and sphenoid, we can tell at once just where we are in these structures.

While the operation I am to present is original as far as I am concerned, undoubtedly hundreds

of men are performing their ethmoid operation in exactly the same way. I have been unable to find a description that places us on familiar terms with these important structures.

Operation.—The instruments necessary for the operation are a nasal speculum, and a nasal cutting forceps (Gruenwald, Myles, Hartman) with a fenestrated lower blade and a blade of three by five millimeters, the thickness of the blade being five millimeters, which is about one-half the width of a normal ethmoidal capsule. I find the forceps with the universal handle the best because the lower lip of the blade is stationary, and you can place the blade just where you wish to cut, and there is no pulling back in the action. Another instrument needed is a double-end cup-shaped curette twenty-two centimeters long with one end bent at an angle of forty-five degrees about two centimeters from the end, the cup in the angle end to be fenestrated. The handle is made octagonal in shape so that it can be firmly held at any angle.

With the patient in a sitting position, and the part cocainized, the head is thrown well back and if there is polypoid degeneration present, the anterior ethmoid cells are opened with the nasal cutting forceps, biting just under the anterior end of the middle turbinate and continuing backward and upward as long as there is soft bone encountered. As we progress backward, the head is brought forward so we can follow along the hard plate of the skull. With a mental picture of the ethmoid capsule, bounded as it is on the orbital side by the lachrymal bone and the ethmoid orbital plate, nasally by the middle turbinate, superiorly by the temporo-orbital plate, and posteriorly by three-fifths of the anterior wall of the sphenoidal sinus, we take the straight end of the curette and with a firm but gentle stroke in every direction, curette out all the soft cells. If we find firm, smooth, and yielding tissue under our curette on the orbital side, we know we are down to the periosteum of the orbit, and force should not be used. With the angle end of the curette any anterior cells are removed, enlarging the space upward toward the frontal sinus. We now cut out the floor of the capsule back to the sphenoid sinus, giving a free open space under the entire length of the middle turbinate. There is little bleeding, owing to the fact that we do not cut either the anterior or posterior ethmoidal or the sphenopalatine arteries.

The cavity is wiped out with large swabs, using a whirling movement to collect any particles of

bone or débris, and then a large swab of cotton saturated with 3 per cent iodine in glycerine is applied in the cavity for a few minutes to stop the bleeding and disinfect the cavity. With a dry cavity any overlooked soft portions can be removed. If the capsule does not show definite softening or polypoid degeneration, the straight end of the curette is possibly the best instrument to use to enter the anterior ethmoid cells, or it may be necessary to employ a chisel; however, after some experience the cutting forceps is generally used.

The cavity is not packed, but a finger-shaped piece of cotton is placed in the middle meatus, and the patient is allowed to go home, with instructions to remove the cotton in four hours

and report in three days. The home treatment consists of dropping a few drops of nasal oil into the nostril three times a day, having the patient in the prone position with the head well back; as the medicine is dropped into the nostril, he is told to sniff violently. Every third day, after cocainizing and cleaning the nose, the cavity under the middle turbinate is swabbed with the iodine-glycerine solution. In a short time it is hard to detect that the nose has been operated on.

If, after a suitable length of time, the discharge does not cease, the nose can be re-cocainized and the operation easily extended into the sphenoid; or by the use of the Thompson-Good rasps a large opening can be made into the frontal sinus.

TENTATIVE PROGRAM OF MINNEAPOLIS CLINIC WEEK APRIL, 20, 21, 22 AND 23, 1920

This program may be materially changed at points, and so far as possible definite information as to all clinics will be given in the daily bulletins.

Work will continue every day in all the hospitals in its usual routine, and the work covered by this program is only a part of the week's work. No name of a clinician may appear more than twice upon the program of the week.

ABBOTT HOSPITAL

(First Ave. S. and E. Eighteenth St.)

TUESDAY, APRIL 20

10:30 A. M.

General Pediatrics - - - Dr. J. P. Sedgwick

THURSDAY, APRIL 22

10:30 A. M.

General Pediatrics - - - Dr. J. P. Sedgwick

FRIDAY, APRIL 23

10:30 A. M.

General Pediatrics - - - Dr. Rood Taylor

ASBURY HOSPITAL

(Ninth Ave. S. and E. Fourteenth St.)

TUESDAY, APRIL 20

8:30 A. M. to 12:30 P. M.

Cataract extraction; Strabismus; Extirpation of Lacrimal Sac - - - Dr. J. A. Watson

9 A. M. to 12 M.

Smith-Indian Cataract Operations; Mastoidectomy with the Electric Burr; Bloodless Tonsillectomies, with the Use of Special Clamps, and with Gas Anesthesia; Exenterations of Ethmoids without Removing the Turbinates; Intra-nasal Opening of the Frontal Sinus -
- - - Drs. F. J. and J. A. Pratt

10:30 A. M. (children's ward)

Infant Feeding - - - Dr. N. O. Pearce

WEDNESDAY, APRIL 21

9 A. M. to 12 M.

Same Subjects as in Yesterday's Program. (See above) - - - Drs. F. J. and J. A. Pratt

8:30 A. M. to 12:30 P. M.

Radical Mastoid; Tonsillectomies - - -
- - - Dr. J. A. Watson

9 A. M. to 12 M.

General Orthopedic and Fracture Surgery -
- - - Dr. A. E. Wilcox

10 A. M. to 12 M.

Surgical Clinic - - - Dr. A. H. Parks

THURSDAY, APRIL 22

9 A. M. to 12 M.

General Obstetric and Fracture Surgery - -
- - - Dr. A. E. Wilcox

FRIDAY, APRIL 23

9 A. M. to 12 M.

General Surgery - - - Dr. C. P. Nelson

DEACONESS HOSPITAL

(2312 Fifteenth Ave. S.)

WEDNESDAY, APRIL 21

9 A. M. to 2 P. M.

Suture of Ulnar Nerve (neuroma) (local anesthesia); Suture of Ulnar Nerve; Neurolysis of Median Nerve; Pedicle Flap, Chest to Forearm (anesthesia by brachial plexus injection); Clinical Demonstration (surgery of upper extremities under local anesthesia); Fistula in Ano (caudal anesthesia) - -
- - - Dr. A. F. Bratrud

THURSDAY, APRIL 22

8:30 A. M.

Herniotomy (local anesthesia); Toxic Goiter (local anesthesia); Cholecystectomy and Appendectomy - - - Dr. R. M. Pederson

EITEL HOSPITAL

(W. Fourteenth and Willow Sts.)

TUESDAY, APRIL 20

8 to 10:30 A. M.

Clinic in Eye, Ear, Nose, and Throat - -
- - - - Dr. W. E. Patterson

10:30 A. M. to 12:30 P. M.

Clinic in Surgery - - - Dr. Emil Robitshek

2 to 4 P. M.

Clinic in Eye, Ear, Nose, and Throat - -
- - - - Dr. C. N. Spratt

WEDNESDAY, APRIL 21

9 to 10:30 A. M.

Clinic in Medicine - - - Dr. H. L. Ulrich

10:30 A. M. to 12:30 P. M.

Clinic in Surgery - - - Dr. George G. Eitel

THURSDAY, APRIL 22

9 A. M. to 12 M.

Clinic in Surgery - - - Dr. George G. Eitel

2 to 3 P. M.

Clinic in Eye, Ear, Nose, and Throat - -
- - - - Dr. C. N. Spratt

FRIDAY, APRIL 23

9 to 10:30 A. M.

Clinic in Surgery - - - Dr. Alfred T. Baker

10:30 A. M. to 12:30 P. M.

Clinic in Surgery - - - Dr. Emil Robitshek

11 A. M.

Gastro-enterology - - - Dr. H. L. Knight

FAIRVIEW HOSPITAL

(Twenty-fourth Ave. S. and Sixth St.)

TUESDAY, APRIL 20

8 A. M. to 12 M.

General Surgery - - - Dr. Ivar Sivertsen

WEDNESDAY, APRIL 21

8 A. M. to 12 M.

General Surgery - - - Dr. N. H. Scheldrup

THURSDAY, APRIL 22

8 A. M. to 12 M.

General Surgery, with Demonstration of Cases
- - - - Dr. Ivar Sivertsen

FRIDAY, APRIL 23

9 to 10 A. M.

Practical Points on Pulmonary Phthisis - -
- - - - Dr. Frank H. Hacking

8 A. M. to 12 M.

General Surgery - - - Dr. N. H. Scheldrup

GENERAL (CITY) HOSPITAL

(Fifth St. and Seventh Ave. S.)

TUESDAY, APRIL 20

8:30 to 10 A. M.

Gynecology and Obstetrics - - - Dr. J. H. Simons

8:30 to 10:30 A. M.

Abdominal Hysterectomy for Fibroid Uterus
- - - - Dr. C. M. Carlaw

8 to 10 A. M.

General Surgery - - - Dr. M. J. Lynch
Tonsillectomies by Lamb-Beck instrument under
both local and general anesthesia; also a
simple ethmoid operation - Dr. Earl A. Loomis

10 A. M. to 12 M.

Obstetrical and Gynecological Diagnoses - -
- - - - Dr. R. T. La Vake
Surgical Clinic - - - - Dr. A. E. Booth

10:30 A. M.

Lacerated Cervix and Perineum (local anesthe-
sia); Double Salpingectomy and Gilliam -
- - - - Dr. R. M. Pederson

9 to 10:30 A. M.

Medical Clinic - - - - Dr. H. L. Ulrich

10 A. M. to 12 M.

Medical Clinic - - - - Dr. S. P. Rees

1 to 3 P. M.

Eye, Ear, Nose, and Throat Clinic - Dr. J. D. Lewis

WEDNESDAY, APRIL 21

9 to 11 A. M.

Surgical Clinic - - - - Dr. A. T. Mann

9 to 10:30 A. M.

Medical Clinic - - - - Dr. T. A. Peppard

10:30 A. M. (Lymanhurst Division)

Pediatrics - - - - Dr. E. J. Huenekens

10 to 11 A. M.

General Neurological Diagnostic Clinic - -
- - - - Dr. W. A. Jones

11 A. M. to 1 P. M.

Prostatectomies - - - Dr. Franklin Wright

THURSDAY, APRIL 22

8 to 10 A. M.

Surgical Clinic - - - - Dr. Edward Moren

10 A. M. to 12 M.

Surgical Clinic - - - - Dr. A. H. Parks

9 to 11 A. M.

Repair of Lacerated Cervix and Perineum;
Improved operation for Uterine prolapse,
Cystocele and Rectocele; Salpingectomy for
Pyosalpinx with Pelvic Adhesions, and oper-
ation for Replacement of the Uterus; Hyster-
ectomy for Fibroid of Uterus - - -
- - - - Dr. A. E. Benjamin

10 A. M. to 12 M.

Medical Clinic - - - - Dr. C. N. Brooks

11 A. M. to 1 P. M.

Medical Clinic - - - - Dr. A. Josewich

1 to 3 P. M.

Operative Clinic—Eye, Ear, Nose, and Throat
- - - - Dr. J. D. Lewis

12:30 to 1:30 P. M.

Clinical Tuberculosis - - - Dr. F. H. Hacking

10:30 A. M. (Children's Ward)

General Pediatrics - - - Dr. Rood Taylor

FRIDAY, APRIL 23

9 to 10:30 A. M.

Surgical Clinic - - - - Dr. F. H. Poppe

9 to 11 A. M.

Gynecological Clinic - - - Dr. F. L. Adair

9 to 10:30 A. M.

Medical Clinic - - - Dr. T. A. Peppard

10:30 A. M. to 12 M.

Surgical Clinic - - - Dr. J. Frank Corbett

1 to 3 P. M.

Tonsil Clinic - Drs. S. J. Pratt and E. A. Loomis

HILLCREST HOSPITAL

(Harriet and Franklin Ave. W.)

TUESDAY, APRIL 20

8:30 A. M. to 12 M.

General Surgery and Radium Clinics - -
- - - Dr. J. W. Little and Associates

THURSDAY, APRIL 22

General Surgery and Radium Clinics - -
- - - Dr. J. W. Little and Associates

LA SALLE BUILDING OPERATING-ROOMS

(Marquette Ave. and Seventh St.)

FRIDAY, APRIL 23

10 A. M. to 12 M.

Nose and Throat Clinic - Drs. Parker and Phelps

MILLARD HALL

(University Campus)

TUESDAY, APRIL 20

9 to 11 A. M. (Room 307)

Metabolism Studies; Demonstrations of a Sys-
tem of Chemical Blood Analysis - - -
- - - Dr. Ignatius J. Murphy

THURSDAY, APRIL 22

1 to 3 P. M. (Room 307)

Metabolism Studies; Demonstrations of a Sys-
tem of Chemical Blood Analysis - - -
- - - Dr. Ignatius J. Murphy

NORTHWESTERN HOSPITAL

(Chicago Ave. and E. Twenty-seventh St.)

TUESDAY, APRIL 20

8 to 10 A. M.

Radical Mastoidectomy; Tonsillectomy (local
anesthesia); Tonsillectomy (general anes-
thesia) - - - Dr. Horace Newhart

8:30 A. M.

Tucking Operation for Strabismus; Radical
Mastoid Operation; Tonsillectomies (local
anesthesia) - - - Dr. E. S. Strout

9 A. M. to 12 M.

Goiter Clinic—(A) Demonstration of the value
of basal metabolism test: (1) In cases of post-
operative myxedema; (2) In non-operative
cases of hypothyroidism; (3) In cases of
exophthalmic goiter as a guide for surgery;
(4) In unclear cases as an aid to the diag-
nosis. (B) If the thyroid is to be excised,
how much of it should be excised? One
Major Operation: Supravaginal hysterectomy
for large myoma - - - Dr. Gustav Schwyzer

WEDNESDAY, APRIL 21

8 to 10 A. M.

Tonsillectomy (local anesthesia), blunt dissec-
tion, modified Sluder; Tonsillectomy (gen-
eral anesthesia), sharp dissection, modified
Sluder - - - Dr. W. A. Camp

8:30 A. M.

Appendectomy and Modified Gilliam Operation
for Retrodisplaced Uterus; Removal of Gall-
stones; Thyroidectomy; Hysterectomy for
Fibromyoma - - - Dr. A. E. Benjamin

THURSDAY, APRIL 22

8 to 10 A. M.

Radical Mastoidectomy; Simple Mastoidectomy
(local anesthesia); Tonsillectomies - -
- - - Dr. Horace Newhart

8 to 10 A. M.

Tucking Operation for Strabismus; Radical
Mastoid Operation; Tonsillectomies (local
anesthesia); Submucous Resection of the
Nasal Septum - Drs. E. S. and G. Elmer Strout

8:30 to 10:30 A. M.

Uterine Prolapse; Gall-bladder and Possibly
Gall-stones - - - Dr. C. M. Carlaw

FRIDAY, APRIL 23

8 to 10 A. M.

Tonsillectomies; Submucous Resection of the
Nasal Septum - - - Dr. W. E. Camp

9 A. M. to 12 M.

Stomach Surgery—(a) Demonstration of cases
of operated carcinoma of the stomach; two
cases, demonstration of patients and of spec-
imens. (b) Demonstration of cases operated
on for ulcer of the stomach; gastro-enteros-
tomy; demonstration of one case with re-
moval of a Murphy button which was in the
stomach for sixteen years - - -
- - - Dr. Gustav Schwyzer

PILLSBURY SETTLEMENT HOUSE

(320 Sixteenth Ave. S., near Seven Corners)

THURSDAY, APRIL 22

10:30 A. M.

Infant Feeding - - - Dr. E. J. Huenekens

ST. BARNABAS HOSPITAL

(Ninth Ave. and Sixth St. S.)

TUESDAY, APRIL 20

8:30 A. M.

Double Ethmoid Exenteration; Tonsillectomy
(local and general anesthesia); Submucous
Resection of the Nasal Septum - - -
- - - Dr. J. S. Reynolds

9 to 11 A. M.

General Surgery - - - Dr. F. A. Dunsmoor

WEDNESDAY, APRIL 21

8:30 A. M.

Tonsil Clinic—Modified Sluder Method (gen-
eral anesthesia); Tonsillectomies (local an-
esthesia); Tucking Operation for Strabismus
- - - Dr. G. Elmer Strout

8:30 to 10 A. M.
Laparotomy - - - - Dr. W. Aurand

9 to 11 A. M.
General Surgery; Intravenous Injection of
Salvarsan - - - - Dr. J. O. Taft

9 A. M. to 12 M.
Mastoidectomy; Cataract Extraction; Tenot-
omy and Advancement; Needling; Tonsil
Cases - - - - Dr. J. Francis Schefcik

9 to 11 A. M.
General Surgery - - - - Dr. Earl R. Hare

THURSDAY, APRIL 22

8:30 A. M.
Tendon-tucking for Squint; Iridectomy; Mas-
toid - - - - Dr. James S. Reynolds

8 to 10 A. M.
Salpingectomy; Perineorrhaphy; Trachelorrhaphy
(two cases) - - - - Dr. J. H. Simons

9 to 11 A. M.
General Surgery - - - - Dr. Earl R. Hare

9 A. M. to 12 M.
General Surgery - - - - Dr. F. A. Dunsmoor

ST. MARY'S HOSPITAL (2500 Sixth St. S.)

TUESDAY, APRIL 20

9 to 11 A. M.
General Surgery - - - - Dr. Wm. J. Byrnes

9 to 11 A. M.
General Surgery - - - - Dr. H. B. Sweetser

9 A. M. to 1 P. M.
Lantern Slide and Motion Picture Demonstra-
tion of Local Anesthesia Technic; Clinical
Demonstration of Infiltration Anesthesia in
Abdominal Work; Clinical Demonstration of
Caudal Anesthesia in Perineal and Pelvic
Cases - - - - Dr. Robert Emmett Farr

9 A. M. to 1 P. M.
Review of the Anatomy of the Sensory Ner-
vous System - - - - Dr. Stanley R. Maxeiner

9 A. M. to 1 P. M.
Toxicity, Dosage and Other Characteristics of
the Various Local Anesthetics - - - -
- - - - Dr. Milton E. Rose

WEDNESDAY, APRIL 21

8 to 10 A. M.
Urology - - - - Dr. Gilbert J. Thomas

9 to 11 A. M.
General Surgery - - - - Dr. H. D. Sweetser

THURSDAY, APRIL 22

9 to 11 A. M.
General Surgery - - - - Dr. Wm. J. Byrnes

10 A. M. to 12 M.
Uterine Fibroids - - - - Dr. E. Z. Wanous

WEDNESDAY, APRIL 21

9 A. M. to 1 P. M.
The Anesthesia Problem: Clinical Demonstra-
tion of Brachial Anesthesia; Clinical Demon-
stration of nerve blocking in neck and hernia
cases; Exhibition of new apparatus, including

the Automatic Lifter, Pneumatic Injector,
Automatic Spring Retractor, Suprapubic Pros-
tatic Retractor; Goiter Clamp, Elephant
Trunk Operating-room Lamp; Muscle Clamps
for transverse incisions; An improved meth-
od of skin disinfection and skin exclusion -
- - - - Dr. Robert Emmett Farr

9 A. M. to 1 P. M.
Toxic Effects of General Anesthetics - - -
- - - - Dr. Milton E. Rose

SWEDISH HOSPITAL (703 Tenth Ave. S.)

TUESDAY, APRIL 20

8 A. M. to 12 M.
Herniotomy (inguinal hernia); Herniotomy
(inguinal hernia); Appendectomy (chronic
appendicitis); Suspension of Uterus (pro-
lapsed) - - - - Dr. Theo. Tennyson

8 to 10 A. M.
Radical Mastoid (chronic otitis media); Ton-
sillectomy (hypertrophied and infected ton-
sils); Tonsillectomy (hypertrophied and in-
fected tonsils) - - - -
- - - - Drs. J. G. Erickson and G. Swendseen

8 to 10 A. M.
Litholapaxy (stone in bladder); Prostactec-
omy (chronically enlarged prostate) - - -
- - - - Dr. Oscar Owre

10 A. M. to 12 M.
Abdominal Operations - - - - Dr. Ed. Moren

10 A. M. to 12 M.
Appendectomy (chronic appendicitis); Amputa-
tion of Breast (sarcoma) - - - - Dr. A. Soderlind

WEDNESDAY, APRIL 21

8 A. M. to 12 M.
Gastro-enterostomy (pyloric obstruction); Ap-
pendectomy (chronic appendicitis); Coffey
Suspension of Uterus (retroversion); Per-
ineorrhaphy (lacerated perineum) - - - -
- - - - Dr. C. C. Kistler

8 A. M. to 12 M.
Thyroidectomy (exophthalmic goiter); Cho-
lecystectomy (gall-bladder); Hysterectomy
(fibroid degeneration of uterus) - - - -
- - - - Dr. A. E. Johnson

8 A. M. to 12 M.
Hysterectomy (fibroid degeneration of uterus);
Hysterectomy (fibroid degeneration of
uterus); Adair Suspension of Uterus (retro-
flexed); Appendectomy (chronic appendi-
citis) - - - - Drs. C. C. and R. R. Kennedy

THURSDAY, APRIL 22

8 to 10 A. M.
Myomectomy (fibroid tumor of uterus);
Perineorrhaphy (lacerated perineum); Sus-
pension of Uterus (retroversion) - - - -
- - - - Dr. F. L. Adair

8 to 10 A. M.
Appendectomy (chronic appendicitis); Perin-
eorrhaphy (lacerated perineum) - - - -
- - - - Dr. H. W. Quist

8 to 11 A. M.

Ear, Nose, and Throat Clinic - - - -
 - - - Drs. E. H. Parker, Douglas Wood,
 and Dr. K. A. Phelps

10 A. M. to 12 M.

Appendectomy (chronic appendicitis); Cho-
 lecystotomy (chronic cholecystitis) - - -
 - - - - - Dr. O. A. Olsen

10 A. M. to 12 M.

Cholecystotomy (cholecystitis); Removal of
 Lipoma of Thigh - - - - Dr. H. P. Linner

11 A. M. to 12 M.

Removal of large ovarian cyst - - - -
 - - - - - Dr. A. E. Hedbach

FRIDAY, APRIL 23

8 A. M. to 12 M.

Cholecystectomy (gall-stones); Appendectomy
 (chronic appendicitis); Herniotomy (inguin-
 al hernia); Trachelorrhaphy (lacerated
 cervix) - - - - Dr. C. M. Kistler

8 A. M. to 12 M.

Appendectomy (chronic appendicitis); Gilliam
 Suspension of Uterus (anteversion); Perin-
 eorrhaphy (lacerated perineum) - - - -
 - - - - - Dr. Theo. Tennyson

8 A. M. to 12 M.

Thyroidectomy (exophthalmic goiter); Thyroi-
 dectomy (cyst of middle lobe); Thyroidect-
 omy (exophthalmic goiter) - - - -
 - - - - - Drs. A. E. Johnson and C. C. Kennedy

8 to 10 A. M.

Nose and Throat Clinic - Drs. Parker and Phelps

MEDICAL CLINICS

(Sun Parlor)

WEDNESDAY, APRIL 21

2 to 3 P. M.

Pernicious Anemia (demonstration of bed
 cases) - - - - Dr. S. P. Schneider

HOSPITAL LABORATORY

(Pathological)

THURSDAY, APRIL 22

Radium—Properties—Cases - Dr. Chas. R. Drake

X-RAY ROOM

FRIDAY, APRIL 23

X-ray and clinical demonstration of advanced
 cases of ulcer and cancer of stomach - - -
 - - - - - Dr. C. A. Donaldson

THOMAS HOSPITAL

(2340 Sixth St. S.)

UNIVERSITY DISPENSARY

(Washington Ave. and Union St. S. E.)

TUESDAY, APRIL 20

1 to 2 P. M.

Anemia, Joint Diseases, Goiter, and High Blood
 Pressure Cases - - - -
 - - - - - Drs. J. P. Schneider and F. H. K. Schaaf

1 to 2:30 P. M.

Various Gastro-intestinal Cases - Dr. C. B. Wright

1 to 2:30 P. M.

Cardiac Irregularities - - - -
 - - - Drs. Olga Hansen and Thos. Ziskin

1 to 2:30 P. M.

Skin Diseases and Syphilis - Dr. H. E. Michelson

1 to 2:30 P. M.

Diseases of the Nervous System - - - -
 - - - - - Dr. A. W. Morrison

WEDNESDAY, APRIL 21

10 A. M. to 12 M.

Obstetrical and Gynecological Diagnoses -
 - - - - - Dr. R. T. La Vake

1 to 2:30 P. M.

General Medicine - - - - Dr. C. R. Drake

1 to 2:30 P. M.

Skin Diseases and Syphilis - Dr. S. E. Sweitzer

1 to 2:30 P. M.

Skin Diseases and Syphilis - Dr. G. M. Olson

2:30 P. M.

Gastro-intestinal Diseases - - - Dr. R. I. Rizer

THURSDAY, APRIL 22

1 to 2:30 P. M.

Anemia, Joint Diseases, Goiter, and High Blood
 Pressure Cases - - - -
 - - - - - Drs. J. P. Schneider and F. H. K. Schaaf

1 to 2:30 P. M.

Various Gastro-intestinal Cases - Dr. C. B. Wright

1 to 2:30 P. M.

Mitral, Aortic, Tricuspid Valvular Disease -
 - - - - - Drs. Olga Hansen and Thos. Ziskin

1 to 2:30 P. M.

Dietetics and Nephritis, Hyperextension, and
 Work in Basal Metabolism - Dr. A. H. Beard

1 to 2:30 P. M.

Skin Diseases and Syphilis - Dr. G. M. Olson

1 to 2:30 P. M.

Diseases of the Nervous System - - - -
 - - - - - Dr. A. W. Morrison

FRIDAY, APRIL 23

1 to 2:30 P. M.

General Medicine - - - - Dr. C. R. Drake

1 to 2:30 P. M.

Skin Diseases and Syphilis - - - -
 - - - - - Drs. H. E. Michelson and S. E. Sweitzer

UNIVERSITY HOSPITAL

(Union and Essex Sts. S. E.)

TUESDAY, APRIL 20

8 A. M. to 12:30 P. M.

General Surgery (operative clinic) - - -
 - - - - - Drs. Archibald MacLaren and James Johnson

9 A. M. to 12:30 P. M.

Eye, Ear, Nose and Throat (operative clinic)
 - - - - - Dr. Howard Clark

9:30 to 10:30 A. M.

Obstetrics (bedside clinic) - Dr. J. C. Litzenberg

WEDNESDAY, APRIL 21

8 to 11 A. M.

General Surgery (operative clinic) - - -
- - - - - Dr. A. C. Strachauer

9 to 11 A. M.

Urology - - - - - Dr. F. R. Wright

9 to 10 A. M. (medical wards)

Gastro-intestinal Clinic - - - Dr. C. B. Wright

10 to 11 A. M. (neurology ward)

Neurology - - - - - Dr. C. E. Nixon

10:30 A. M. (children's ward)

General Pediatrics - - - - - Dr. N. O. Pearce

10:30 A. M. (new-born ward)

New-Born Clinic - - - - - Dr. F. C. Rodda

11 A. M. to 12 M.

Work in Metabolism Laboratory - - -
- - - Drs. C. A. McKinlay and Frances Ford

11 A. M. to 12:30 P. M.

Gynecology (operative clinic) - Dr. J. C. Litzenberg

2 to 3 P. M.

Gastro-Intestinal Clinic - - - Dr. R. D. Rizer

THURSDAY, APRIL 22

8 A. M. to 12:30 P. M.

General Surgery (operative clinic) - - -
- - - Drs. A. A. Law and F. A. Olson

9 A. M. to 12:30 P. M.

Eye, Ear, Nose and Throat (operative clinic)
- - - - - Dr. W. R. Murray

8:30 A. M. to 12 M. (first floor dressing-room)

Urology - - - - - Dr. Gilbert J. Thomas

9 to 10 A. M.

Cardiovascular Clinic - - - Dr. S. Marx White

10 to 11 A. M. (neurological ward)

Neurology - - - - - Dr. A. S. Hamilton

11 to 12 M.

Work in Metabolism Laboratory - - -
- - - Drs. C. A. McKinlay and Frances Ford

2 to 3 P. M. (medical wards)

Diseases of Metabolism - - - Dr. A. H. Beard

FRIDAY, APRIL 23

8 to 11 A. M.

General Surgery (operative clinic) Dr. H. P. Ritchie

11 A. M. to 12:30 P. M.

Gynecology (operative clinic) - Dr. W. H. Condit

DONALDSON BUILDING

(Nicollet Ave. and 7th St.)

WEDNESDAY AND THURSDAY, APRIL 21 and 22

10 A. M. to 3 P. M.

Demonstration of a new and successful method
to cure gum-inflammations and pyorrhea with
the toothbrush only. Exhibition of patients
and demonstration of method - - -
- - - - - Dr. Thomas B. Hartzell

AFTERNOON GENERAL MEETINGS

4:00 to 6:00 P. M.

Gold Room of Radisson

TUESDAY—MILITARY SURGERY

Dr. A. A. LAW, Chairman

Diagnosis of Peripheral Nerve Injuries, with lan-
tern slides - - - - - Dr. A. S. HamiltonSurgery of Peripheral Nerves with lantern slides
- - - - - Dr. J. Frank CorbettLessons from Military Surgery as Applied to Civil
Surgery - - - - - Dr. S. R. MaxeinerMoving Pictures—Functional Condition Contracted
from Life in the Trenches - - - By SallierWEDNESDAY—MEDICINE, LABORATORY AND
X-RAY

Dr. S. MARX WHITE, Chairman

Clinical Pathological Conference Dr. H. E. Robertson

Method of Standardization of Digitalis with Cats
- - - - - Dr. R. E. Morris

X-ray Lantern Slides - - - Dr. Frank S. Bissell

Lesions of the Fundus Oculi in General Diseases
- - - - - Dr. W. E. Patterson

THURSDAY

Dr. JOHN H. MORSE, Chairman

4 to 5:30 P. M.

War Wounds of the Face and Jaws, with lantern
slides - - - - - Dr. C. W. WaldronLaryngeal Neoplasms, with lantern slides - - -
- - - - - Dr. J. D. LewisRadium Therapy in Lesions of the Face - - -
- - - - - Dr. S. E. SweitzerSimple Mastoidectomy (moving picture) - - -
- - - Dr. Wendell Phillips, New York City

FRIDAY—ORTHOPEDICS AND PEDIATRICS

Dr. E. J. HUENEKENS, Chairman

Fractures Near Joints, Lantern Slides of X-rays
- - - - - Dr. Emil GeistOpen and Closed Treatment of Fractures, with Lan-
tern Demonstration - - - Dr. Archibald WilcoxMethod of Determining Coagulation Time of the
Blood in New-born and Application to Diseased
Conditions; Some Interesting X-Ray Findings in
Children - - - - - Dr. F. C. Rodda

Moving Picture—"Hawley Fracture Table"



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APRIL 15, 1920

OUR 50TH ANNIVERSARY—AN INVITATION

The issue of THE JOURNAL-LANCET for June 1 will take note of the 50th birthday of this paper. It is far from our intention to fill that issue with laudatory remarks about the paper, yet we feel that the occasion is a fitting one to say, both personally and impersonally, something about the men who gave the Northwestern profession of today a splendid heritage in the form of professional standards respected and lauded by medical men in all parts of the country—a heritage unequalled except by Nature's physical heritage of a splendid climate, rich soil, vast forests, and great mineral wealth. Our fathers surely deserve our recognition, laudation, and thanks.

We invite all men who have been in this splendid movement—for fifty years or for one year—to record, briefly, their impressions. Words about the older men and about conditions in olden times, or words about the profession of today as it appears to the younger men, will be thankfully received. Surely, it would be very interesting to know what impression the profession of twenty, thirty, or forty years ago made upon the men who came here from the east or the south; nor would there be less interest in the impressions made upon men who have come here within the past five or ten years.

Copy for our issue of June 1 should reach us soon after May 10th, but not later than May 12th.

MINNEAPOLIS CLINIC WEEK

We submit, for the attention of the readers of THE JOURNAL-LANCET, a preliminary program of the Minneapolis Clinic Week. This must be, of necessity, rather tentative in its makeup, but it shows that the men are cheerfully making their best efforts to show what can be done during Clinic Week.

It has been very gratifying to the Program Committee that our demands have been so responsively met, and the Clinic Week, beginning April 20th, carries with it the expectation that the men who come as our visitors will see and hear more than they have seen or heard before. The hospitals, which are within the easily reached clinical zone, will be crowded with visitors unless we mistake the evidences which have come to us so freely.

THE AMERICAN COLLEGE OF SURGEONS AND THE SOUTH AMERICAN SURGEONS

The recent official visit of the President, Dr. William J. Mayo, and the Secretary-General, Dr. Franklin H. Martin, of the American College of Surgeons to Peru, Chile, Argentine, and Uruguay, carrying practically an invitation to the surgeons of those countries to become members of the College of Surgeons, is an event of very great interest, far transcending in importance the formal membership of the surgeons of the two continents in a scientific society. The hearty approval of this visit by the United States Government, and its instructions to its representatives in all the countries visited to co-operate with the local organizations to welcome the American party, are sufficient evidence of the importance attached to the plans of the College of Surgeons to invite South American surgeons into a cordial union with North American surgeons.

Such a union of surgeons means a closer and speedier union of the whole peoples of the two continents, for it means an understanding of each other not hitherto obtained by not a few commercial efforts in this direction. It means this because the union is between men of culture, each capable of interpreting his own people to the people of the other, and each having the confidence of his own people in a degree not possessed by men in another profession or trade. The interests of surgeons of each country are the common interests of humanity, and in their pursuit of these common interests the hateful jealousies of trade are never aroused.

We rejoice in the success of this visit, and hope the same men will soon be able to visit Brazil and the other countries passed by for lack of time.

The visiting party was a large one, containing members of the Board of Regents of the College and lay friends, who went "visiting round" while the "professionals" were carried into captivity by the surgeons and civilian officials of the countries and cities visited. The party left New York on January 7 and spent the entire month of February in their official work in the countries visited, meeting men of the highest standing in all walks of life.

As most of the surgeons of the South American countries have studied in Europe, it is safe to say that their professional standing is not second to that of the surgeons of any other country; and many of the hospitals visited would readily be accepted as "Standardized" hospitals.

Dr. Mayo will give our readers, at an early day, a travalogue covering some of the events of the visit.

ON THE WAY TO NEW ORLEANS

Many inquiries have come to THE JOURNAL LANCET office as to what train service will be available. Mr. T. A. Morken, City Passenger Agent for the Milwaukee & St. Paul road, tells us that on Saturday night, April 24th, there will be one or two coaches attached to the regular Chicago Limited train on the Milwaukee road, which leaves at 7:15 P. M., arrives in Chicago at 9:00 A. M. Then he plans to have sufficient number of coaches to accommodate all Northwestern men attached to the Illinois Central train, which leaves Chicago at 12:00 M., and arrives in New Orleans on Monday at 11:15 A. M. Or a train may be taken at Minneapolis 5:45 P. M., to which special coaches will be attached, which arrives in Chicago at 7:30 A. M., Sunday, and from there the "Special" out of Chicago will leave at 8:45 A. M. over the Illinois Central. This "Special" arrives in New Orleans 9:15 Monday morning.

This seems to be the shortest route, that is, from Minneapolis to Chicago and from there to New Orleans direct, but, doubtless, other trains and special coaches will be provided on other roads to carry the passenger over any route he may choose.

There will be a railroad booth established at the Radisson Hotel, the headquarters of Minneapolis Clinic Week, where information may be obtained at any time, and reservations made.

THE INCREASE IN BONE DISEASES

Austria is evidently more than burdened in facing the possibility of the death of many of its starved and diseased children, and one's sympathies go out to the unfortunate child in spite of the fact that Austria has been the keynote, as it were, of the recent war disabilities.

Dr. O. A. Oredson, of Duluth, recently received a letter from Dr. Adolph Lorenz, the famous Vienna surgeon, in which he states that the conditions in Vienna are grave,—that even the wildest rumors afloat are only too true, and that without the help of American foods, Vienna would have been a great children's graveyard today. In spite of the fact that America has poured foodstuffs into Austria, bone diseases are on the increase, particularly among young people from fourteen to twenty years of age; and among the younger ones, that is, those under the age of fourteen years, there are apparently many cases of starvation because proper foods are scarce and extremely expensive. It is said that tuberculosis of the bones and joints abounds and outnumbers all other affections; and, as a result of this depleted condition of the children, operations on them are undertaken only when it is absolutely necessary, for operation simply stirs up the active disease state and increases the suffering and misery of the child.

Of course, everyone in Austria has had to work very hard, even from the lowest grade workman to the highest official, because they are all undernourished. Malnutrition is the greatest bugbear that Austria has to fight. Of course, most of the provinces of Austria are fighting for their own existence, and cannot, under those circumstances, feel that they are called upon to house and feed those who are in distress. Suicides have become frequent, but, then, both Austria and Germany have been suicidal countries, as it were, and particularly among children, while suicide among children is very rare in America.

To add to their discomforts, the price of clothing is prohibitive and people are wearing whatever they possess. This only adds to the general disordered state of their physical condition and their mental attitude toward life.

Whatever we may think of Austria's conduct in the past, certainly the children are not to blame. And yet there are some who would deny them any assistance or help in any direction simply because the feeling still is in evidence that Austria and Germany started the war, conse-

quently they should receive no help from any source.

Dr. Lorenz has made a very strong appeal to Dr. Oredson in the hope that contributions may come, through him, to the suffering people of Vienna.

THE POSSIBILITIES OF FURTHER EPIDEMICS

Now that the influenzal epidemic has practically subsided, although not entirely, the authorities are looking forward to the prevention of other and more serious epidemic diseases, such as typhus and bubonic, which are raging in many countries in Europe. The situation has become so acute that Surgeon-General Rupert Blue has gone abroad to confer with the authorities, in order to anticipate plans and details for the prevention of an epidemic.

Typhus and the bubonic plague are easily transmitted from one shore to another, through sailing vessels, steamships, and carriers in general; and, unless special attention is given to the cleansing of the ships and the prevention of rats, mice, and vermin by a process of concrete-sealed walls, ships will bring these diseases to our shores. An effort has been made in this country to concrete all warehouses and docks to prevent rats from entering, and this probably will have to be done on all coasts in order to prevent the accumulation of special germicidal infections.

It will be remembered that some years ago when the bubonic plague appeared in San Francisco, Rupert Blue was the man who went over to the Western coast, and, in conjunction and conference with the authorities, succeeded in stamping out the plague. He succeeded because he went at it at once, and before many animals infected with the disease were permitted to get away.

There is also the danger that these diseases may be carried by animals other than rats. It is said squirrels have been found on the Western coast which were infected, and doubtless they could be found on the Eastern coast as well.

If the entire shipping world were able to get together on preventive measures, our danger would be very much lessened. If the ships were kept in order during their passage from one country to the other, these diseases would be rapidly checked.

It has been said that, notwithstanding the virulence of bubonic plague, white people, particularly if they are cleanly and sanitary, are not in much danger of contracting the disease. This,

however, must not be taken too literally, for it is quite possible that a clean person may suffer through the carelessness of an unclean carrier.

NEWS ITEMS

Dr. H. H. Aldrich has moved from Wessington, S. D., to Orient, S. D.

Dr. M. P. Graham has moved from Carrington, N. D., to Aberdeen, Wash.

Dr. M. J. Fiskdal, of Webster, S. D., is in New York City for postgraduate work in orthopedics.

Dr. F. M. Dryden, of Crookston, is in Chicago doing postgraduate work on the eye, ear, nose, and throat.

Dr. G. H. Richards, of Clear Lake, S. D., has purchased the practice of Dr. O'Toole, of Watertown, S. D.

The Chicago Medical Society, with a membership of 7,000, has increased medical calls from \$3 and \$5 to \$5 and \$10.

Dr. L. W. Barry, of St. Paul, addressed the Interurban Medical Academy of Duluth and Superior at its last meeting.

Dr. Andrew Gullixon, who has practiced in Bricelyn for fourteen years, has sold his practice, and will move to Albert Lea.

Dr. F. B. Strauss, of Bismarck, N. D., was in Chicago last month to attend the annual clinic given by the Rush Medical College.

Dr. Kenneth A. J. MacKenzie, of Portland, Oregon, dean of the University of Oregon Medical School, died last month at the age of 60.

Dr. J. N. Alexander, of Roundup, Mont., has opened the old Roundup Hospital with a staff of nurses to care for the men in nearby mines.

Dr. J. C. Baker, of Lake Preston, S. D., who recently sold his practice, has purchased a farm near Onamia, Minn., and will become a farmer.

The hospital at Paynesville has been so greatly in need of nurses that Drs. Pilon and Sandven made a request through the local paper for volunteer help.

Dr. F. E. Bissell, of Minneapolis, presented a paper on the X-ray before the Stearns-Benton County Medical Society which met at St. Cloud last month.

Dr. T. G. Clement, formerly of Vernon Center, was recently discharged from the army, and

has located in Minneapolis. His army work was mainly in tuberculosis hospitals.

Dr. J. T. Asbury, of Rochester, has purchased the practice of Dr. C. W. Woodruff, of Chatfield, who has retired from practice. Dr. Asbury was formerly located at Wabasha.

The midsummer meeting of the Southern Minnesota Medical Association will be held at Fairmont on June 28 and 29. The preliminary program will appear in our issue of May 1.

Dr. R. G. Montgomery, who formerly practiced in Grand Forks, N. D., and later in Winnipeg, Canada, died last month in Monica, Calif. The remains were buried at Grand Forks.

Dr. John W. Nabersberg, of St. Paul, died last month at the age of 91. He came to St. Paul in 1872 from army medical service in the Civil War. He has not been in active practice in recent years.

Dr. W. A. Allen, of Rochester, celebrated his 86th birthday last month. He has been practicing in Rochester for forty-eight years, a record probably unequalled by any other physician in Minnesota.

Dr. James J. Barfield, Medical Director of the Riverside Tuberculosis Sanatorium, and his field nurse, Miss Bess Kenney, are giving free clinics in Chippewa, Yellow Medicine, Renville, and Lac qui Parle Counties.

Dr. Winfield S. Hall, formerly dean of the Northwestern University Medical School, has been lecturing in Minneapolis on health matters for the past week. Dr. Hall is an entertaining and instructive lecturer.

The preliminary program of Minneapolis Clinic Week will be found on another page. The nature of clinics precludes the possibility of making such a program approach completeness, and this program suffers in this respect.

Dr. H. P. Fischer, of Shakopee, is entertaining Duke Pieterje Korndyke Ormsby, a son of Sir Pieterje Ormsby Mercedes and Jenny Wren Korndyke Hengerveld. Dr. Fischer put up \$33,000 for this privilege at a recent Holstein sale. H. C. L.!

Dr. E. B. Daugherty, the medical inspector of the Tuberculosis Division of the St. Paul City Health Department, announces that more strenuous work is to be done among the infected children of St. Paul in their homes. Additional nurses will be needed for the work.

Dr. Hugo W. Wightman, who died in Omaha, Neb., last month, was the inventor of smokeless

powder. Dr. Wightman who occupied the chair of anatomy and surgery in Creighton Medical College, at Omaha, practiced medicine for a number of years. He died of influenza.

Dr. Edwin F. Price, of Alcester, S. D., who has been a prominent physician in Southeastern South Dakota for over twenty years has gone to Tacoma, Wash., where he will take a special course in röntgenology, and will later locate in the Sacramento Valley of California. Dr. Walter Ochsner, of Chicago, succeeds Dr. Price at Alcester.

The first clinic organized in Helena, Mont., is composed of Drs. Ben C. Brooke, O. M. Lanstrum, B. E. Wiley, Arthur Jordan, John L. Treacy, and Rudolph Horsky. The members of the clinic are men of large experience in the various branches of medicine and surgery, and are well known in the state. An expenditure of over \$25,000 was required for office repairs and equipment.

The National Tuberculosis Association will hold its sixteenth annual meeting in St. Louis, Mo., on April 22, 23 and 24. Dr. H. W. Hill, executive secretary of the Minnesota Public Health Association, is chairman of the Sociological Section. The Minnesota Association will send as delegates Dr. C. L. Scofield, of Benson; Dr. A. P. Laird, of Duluth; and Dr. H. L. Taylor, of St. Paul.

The regular bimonthly meeting of the Huron Medical Society was held Thursday afternoon in the Odd Fellows building. Papers were presented by John W. Shuman, M. D., F. A. C. P., Major M. C. U. S. R., Sioux City, Iowa, on "Influenza—Complications and Diagnosis"; and by Dr. James E. Reeder, Ex-Lieut., U. S. A., of Sioux City, Iowa, on "Mastoiditis." After a lively discussion the Rebeccas served a delightful supper for the eighteen doctors from Hand, Kingsbury and Beadle Counties.—Lorenzo N. Grosvenor, M. D., Secretary.

Dr. H. L. Ulrich, of Minneapolis, has been chosen president of the Hennepin County Tuberculosis Association, which was recently organized as successor to the Anti-Tuberculosis Committee of the Associated Charities. Other officers elected were: L. S. Swenson, first vice president; Mrs. W. P. Hallowell, second vice president; Ruth Eggleston, secretary; E. C. Gale, treasurer. Dr. J. W. Bell, Dr. Geo. Douglas Head, and Dr. J. G. Cross were chosen honorary members of the new association. The Hennepin County Tu-

berculosis Association will continue the educational antituberculosis and general health work formerly carried on by the Associated Charities Committee.

There is a change of date in the Clinic Week program, which was made with considerable difficulty and wholly in the interests of visiting physicians, which should not be overlooked. The annual dinner of the Hennepin County Medical Society was set for Monday evening, April 19. This dinner is to be given on Tuesday evening in order that more visitors may attend and hear the address of Dr. Charles Harrison Frazier, Professor of Clinical Survey in the University of Pennsylvania. The date of the meeting and dinner of the Minnesota Academy of Ophthalmology and Oto-Laryngology, together with the name of the orator of the evening, has not been set. The meeting will take place, and a splendid address will be given.

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FOR SALE

One National sterilizer (medium), \$85; one Spencer microscope, \$75; one electric cautery motor, \$50; good as new. Address, Dr. J. T. Leland, Herman, Minn.

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The prettiest and best-paying sanitarium in the Northwest is offered for sale for the best of reasons. Telephone Hyland 0152 or call at the Sanitarium, corner Plymouth and Penn Aves., Minneapolis.

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Location wanted in town having hospital facilities by experienced man doing general practice and major surgery. Wish business running from \$8,444 up per year with good collections. Reasonable investment made. Address 336, care of this office.

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As soon as possible, a married man as associate in general practice in a South Dakota town. Give age, school graduated from, experience, approximate salary acceptable, and when available. Address 324, care of this office.

OFFICE EQUIPMENT IN ST. PAUL FOR SALE AT A BARGAIN

An oak office desk with chair, an operating table, bath scales, center table, instrument cabinet, immersion stands, Columbus table, sterilizer, office stool, waste receptacle, and numerous other articles. Many of these are almost new. Address 335, care of this office.

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A Packard roadster, in fine condition, recently painted, full equipment, two spare tires. This is a six cylinder 48. Address 333, care of this office.

TWIN CITY ASSOCIATION WANTED

A physician having a large surgical practice in a good town adjacent to the Twin Cities wants to become associated with a group of medical men or a surgeon in Minneapolis or St. Paul where he can have a larger field to develop his specialty. Can take most of his present practice with him. Address 326, care of this office.

PRACTICE FOR SALE IN NORTH DAKOTA

My practice in a North Dakota village of 800 is offered for sale. It pays \$5,500 a year, and can be largely increased. No competition. Desire to sell before May 1 as I intend to specialize. Price, \$500. Address, 331, care of this office.

A PHYSICIAN AND A DENTIST WANTED

A progressive northern Minnesota country town wants a physician and a dentist, both of whom can do well in this place. A young physician, preferably a Scandinavian, will find the location a good one. No other physician in the place. Particulars will be furnished by O. Gunstad, Secretary Commercial Club, St. Hilaire, Minn.

PRACTICE FOR SALE

I wish to retire, and sell my good practice, which can be doubled by active man. Population 400; competition 4, 12, 28, and 32 miles distant; thickly settled; 98 per cent collections; mixed nationality. Hospital 20 miles. On main line of railroad in south central Minnesota. Price, including operating-chair and roll-top desk, \$200. Possession at once. Address 337, care of this office.

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Blakeslee dish washing machine, capacity 4,000 pieces per hour; 2-horse power motor; all in good condition. Will sell cheap. This machine will save its cost in a very short time. Easy to operate. Can be seen in operation at Eitel Hospital, 1375 Willow Street, Minneapolis, Minn. Telephone, Atlantic 0508.

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This beautiful property, fully modern, containing 15 rooms with sleeping porches, large hall, fireplace, sun-room, two bathrooms, kitchen and laundry, hot-water heat, all facing St. Anthony Park with a frontage of 132 feet by 150 depth; fine lawns, orchard and garden, with chicken-house and double garage. Price only \$9,000. Phone Midway 6961 or apply, 2101 Como Ave. West, St. Paul.

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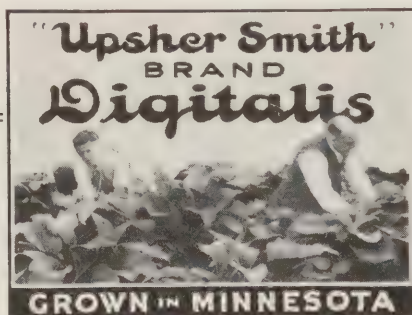
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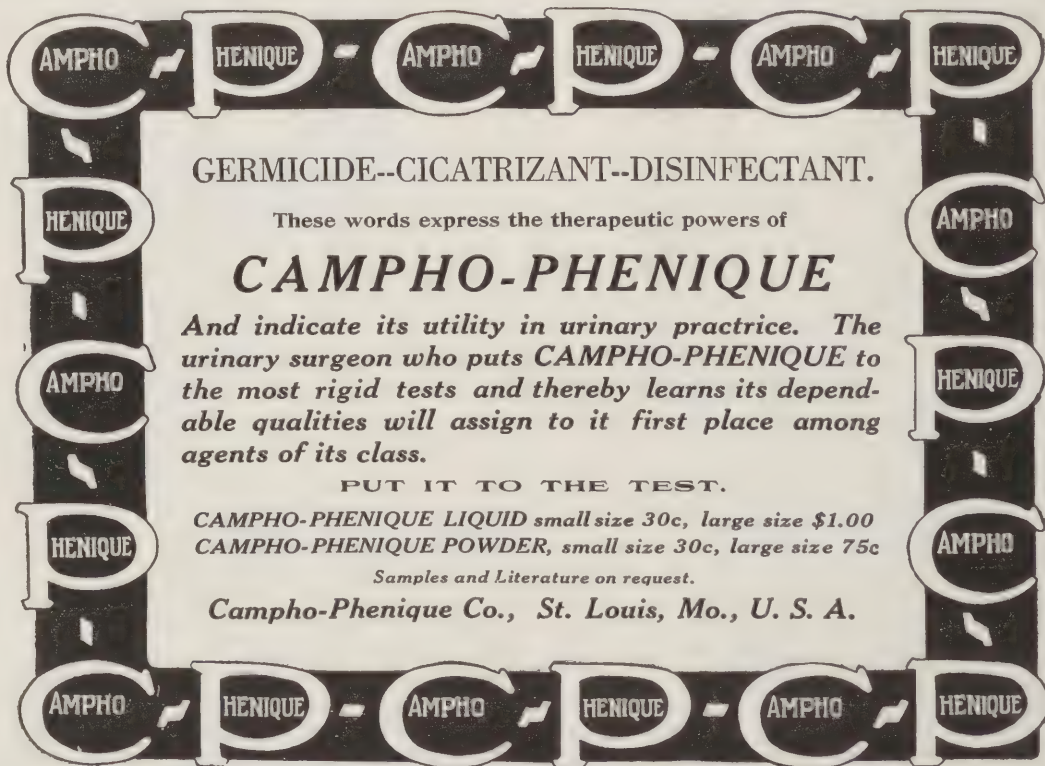
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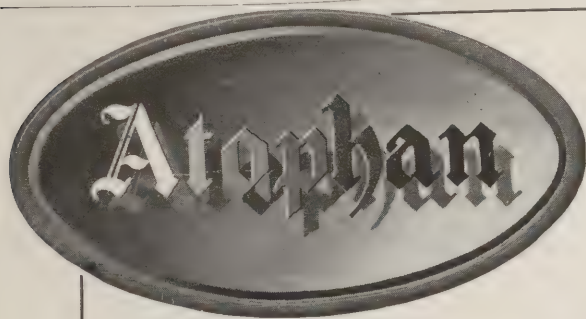
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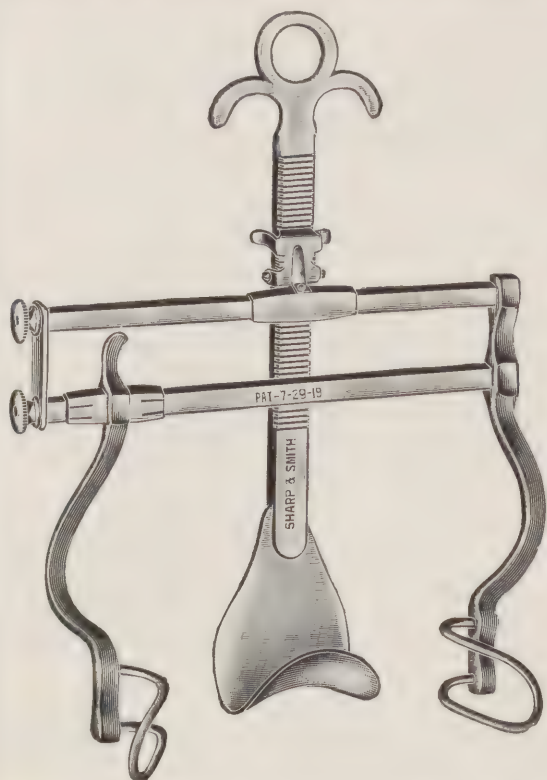
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THE PRESENT STATUS OF NEUROLOGICAL SURGERY*

BY CHARLES H. FRAZIER, M. D.

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PHILADELPHIA, PENNSYLVANIA

How the war upheaval has affected physicians, in mass and individually, consciously and unconsciously, remains an interesting and untold chapter of human psychology. Many physicians of this country experienced a complete change of environment. Each one, thus torn from the habits and customs of years, and thrown into the maelstrom of military practice, must have been influenced and affected by these new reactions to a greater or lesser degree. To some the experiences were refreshing, and opened up new vistas of thought; to some, other fields of the practice of medicine than those in which they had hitherto walked, proved more alluring; to some, military life meant relaxation from the greater exactions and responsibilities of private practice; to others, the regulations and discipline of military régime, robbing them of liberty of action, proved irritating in the extreme. The former returned to their civil station refreshed and rejuvenated; the latter returned more or less the worse for wear.

To most, however, the years of service given to the Government brought their return in one way or another, entirely apart from the sense of duty to the State performed as a part of citizenship. It is almost inconceivable that the varied experiences of the medical officer, on this side of the water or on that, were not, on the whole, enlightening and broadening. The East went West, the West came East; the South

North, and the North South. Each learned from the other—learned where to look for keenness of interest, where for solidity of judgment, where for science and theory, and where for practice.

For most, military service implied an enriching educational experience—an opportunity to give and take, to teach and learn. What a kaleidoscope of character study was furnished in every medical center! Leadership, industry, humanitarianism, the spirit of service and sacrifice—the spirit of devotion to medicine as a science were seen in close contrast with indifference, intolerance, self-satisfaction, and self-seeking. Morally, physically, and intellectually, however, each had the opportunity to gain.

Of immense educational value were the courses organized under the Surgeon General's Office in the early part of the war. The due recognition of medical specialties by the Surgeon General's Office and the organization and training of groups in these respective spheres, more than justified itself in the benefits that accrued to the injured. Think of the number of physicians who have profited by the courses in röntgenology, in the modern treatment of fractures and of wound-infections, in the management of physical defects and deformities, in the treatment of empyemata, in the new field of oral and plastic surgery, to say nothing of the training in the hospitals in the general principles of diagnosis and in administrative details. To a few, opportunities were given for foundation studies in neurosurgery, and, while the limitations of these courses were

*Presented, by invitation, before the Hennepin County Medical Society, Minneapolis, April 20, 1920.

recognized, where the student officer had opportunity and facilities at the front for dealing with gunshot wounds of head and spine, there were striking instances where splendid records were made. An outstanding example is that of a junior officer from your own state whose able work and tireless devotion, in the treatment of his patients, made for him an enviable record. These courses brought men to medical centers, into the large and well equipped institutions of the country, in contact with scientific libraries and laboratories, with unlimited opportunities for attending clinics and lectures, and, I think, scarcely a man took a course but he gained much of real value and inspiration outside of the prescribed work of his military program.

We are all conscious of the fact that there was a break in the continuity of our thoughts and activities, caused by war, and that a new start had to be made, and it seems only natural that we should take an inventory, as it were, of the achievements of the various branches of medical science up to the present time, and thereby learn in what direction our efforts should be turned to throw light on those fields still obscure.

With this thought in mind, I shall review, briefly, the various problems in the field of neurosurgery, with such commentaries as my experience justifies.

While I fully estimate the value of the specialist there is, to my mind, nothing which will so greatly benefit the human race and the science we all serve as the intelligent observation and co-operation of the practitioner of general medicine. He alone comes in contact with the initial stage of disease. He alone, through his influence over the patient, his alertness and judgment, can prevent the lengthening of the already long line of those who come to the surgeon too late or, at least, too late to obtain from surgery the maximum aid.

Because it has more nearly reached a stage of technical perfection than any other operation in this field, I shall refer, first, to the major operation for the treatment of trigeminal neuralgia. For the relief of one form of hernia the Bassini operation is accepted, I believe, as meeting every indication, and is universally adopted. In the same way, I think we may characterize *section of the sensory root* of the Gasserian ganglion,—the radical operation for the relief of major or epileptiform neuralgia. Throughout a number of years operations ranging from peripheral nerve-sections to removal of the Gasserian ganglion by

various difficult and dangerous routes had been experimented with. Cerebral complications, facial paralyses, and defects in vision were seemingly unavoidable complications of the radical procedure, and the mortality was appallingly high. Those, however, we may now characterize as ancient history, and forget the disfiguring scar, the intracranial complications, and the death toll. As now practiced, section of the sensory root of the Gasserian ganglion is eminently satisfactory. From the standpoint of cosmetics, the scar is invisible, and the symmetry of the face undisturbed. In my recent operations I have found it quite feasible to conserve the motor root and thereby leave undisturbed the muscles of mastication. From the standpoint of safety the risk seems ridiculously slight when we consider that in most instances our patients are elderly people. In my last 130 consecutive operations, I have had but one death, and that was of apoplexy twelve days after the operation. We can dismiss from our minds now anything that relates to the technique of the operation. It may be looked upon as a finished product. The profession, as a whole, now may consider it in the light of a completed modern achievement.

There remain, however, two avenues of thought and study for the student in this field: methods of preventing the occasional trophic keratitis, and a critical study of a small but interesting group of patients, who, in an area of total anesthesia, have certain peculiar sensations. For the keratitis we are, I believe, on the track of an effective preventive measure, which, however, is still in the developmental stage. The peculiar paresthesias or sensory disturbances that one sees occasionally after the major operation suggest a sensory supply of dual origin in the trigeminal territory. From what source it is derived is still a matter of conjecture. The only nerve which is distributed over this field in common with the nervus trigeminus is the facialis. We have looked upon this as predominantly motor. Whether there are sensory representations is a thought that must be given consideration.

Certain operations, such as that which we have just considered, really belong to the field of the specialist; others, for obvious reasons, are under the dominion of the general surgeon. Take, for example, the operations for cranial trauma. The general surgeon practically controls this field, and in the management of the problems involved he has established sound principles of practice. There are, however, I think, certain practical

criticisms and warnings which should be given recognition, in the light of the investigations pursued during the last decade and of the published results as studied over this period. I speak especially of the performance of cerebral decompression in cases of cerebral contusion with or without basal fracture. The routine performance of this operation is, I believe, unjustified. The operation should not be practiced in cases that should be recognized as inevitably fatal nor in those cases in which recovery without intervention seems probable. The operation should be reserved for such cases as develop during the first forty-eight hours signs of increasing intracranial pressure, if this be of such a degree as to threaten the function of the medullary centers. In determining when this critical state is approached, certain fallacies, which have crept into literature, should be avoided. Some would have us believe that the increasing blood and intracranial pressure, together with edema of the optic discs, is an infallible operative sign. To follow this teaching would lead to many false conclusions. In order to derive any valuable assistance from circulatory changes, the surgeon should observe the pulse pressure rather than the systolic pressure, and as the pulse pressure approaches the pulse rate the time for intervention is at hand. But the decision for or against operation in this emergency should be based, not alone on the evidences of increasing pressure, as exhibited in the circulation or eyegrounds, but with a much wider perspective of the effect of pressure upon the cerebral function as seen in the disturbances of the reflexes,—of the motor mechanism, of consciousness, and of the respiratory apparatus. In traumatic surgery of cranio-spinal origin the experience of the military surgeon, unfortunately, has made few contributions applicable to civilian practice. The elaboration of the débridement principle to gunshot wounds of the head and the recognition of the importance of immediate intervention in the evacuation hospital saved many lives and redounded to the credit of the American neurosurgical service at the front under the direction of Cushing. The largest returns from the experience of the war in gunshot wounds of the head and spine, however, will come from the observations upon the functional disturbances for which the opportunity for study was so abundant. These will constitute a permanent and invaluable contribution to the all-important problem of localization; and in this

connection special mention should be made of the writings of Holmes.

In the reconstructive period many opportunities were offered for the repair of cranial defects, and many surgeons, to whom this was a virgin field, operated. As a result, endless innovations of technic were proposed, but in the final analysis and testing of cartilaginous, tibial, soup-plate grafts, and what-not, none proved as uniformly satisfactory in every detail as those treated by our pre-war technic, which employed as the bone-filling graft a thin shell of the outer table of the skull. This method, I think, may be regarded as fulfilling every requirement of safety, simplicity and surety.

The chapter most alluring to the student and that representing the highest achievement in neurosurgery is the chapter on brain tumors. When one considers the endless studies in the field of cerebral localization and the development of an eminently satisfactory technic for cranial explorations, one may imagine the millennium is in sight. Far from it: there are still many obstacles to be overcome and faults to be corrected. If I may be pardoned an uncharitable criticism of the students of cerebral localization, it is that too much delight is still derived from the confirmation of a diagnosis on the autopsy-table and too little opportunity is offered for its confirmation on the operating-table. After all, these post-mortem observations represent a study of the terminal stages of disease, such as were wont to delight the old-time student of gross pathology, who revelled over the widespread evidence of the disease that brought the patient to his doom. The large number of preserved brains with operable tumors that adorn the shelves of the pathological museum is, in a measure, a commentary upon the shortcomings in localization. But in a much larger measure it is a reflection upon the unconscionable delay in inaugurating a painstaking investigation of the nature and symptomatology of the lesions in the earlier stages.

The time is ripe, I think, for those interested in the surgery of brain tumors to sum up their accomplishments to date. To do this some sort of a uniform classification must be adopted. We must speak in the same language and use common terms. Too often, for example, is a case designated in literature as "brain tumor" on presumptive evidence, which has never been confirmed either on the operating-table or at autopsy. For the present we may begin by dividing brain tumors into three groups: 1. "Brain tumors" de

facto, in which the diagnosis is confirmed both at operation and by examination of the tissue removed. 2. "Presumptive tumors," including those cases with presumptive evidence of tumor, but lacking confirmation. Many a case is recorded in literature as "brain tumor" after a decompressive operation has been performed, but the diagnosis has never been confirmed. For statistical record these cases should be properly designated. 3. "Pseudotumors," including cases where the clinical syndrome mimics for a time brain tumor, but this diagnosis is eventually eliminated by the subsequent course of events. In this category I would place certain cases of meningeal irritation of infectious origin.

Probably 10 per cent of brain tumors, as a whole, belong to this group, and the importance of early resort to subtemporal decompression to save the patient's eyesight should be emphasized. Too often is operation delayed until the optic nerve has atrophied in the vain hope that localizing symptoms will enable the physician to confirm his diagnosis.

We should not forget, too, that in not a few cases Jacksonian epileptiform seizures will be the only evidence of intracranial growths. Because of the ease of localization and the proximity of the tumor to the cortex these cases offer the brightest prospects for surgical interference, providing the operation be not too long delayed. Only the other day I found at operation a huge endothelioma in the motor cortex of a patient who had had Jacksonian lesions for ten years. This was in striking contrast to a small cortical growth not more than a centimeter or two in diameter, which I removed from a young lady, whose only symptom of a few months' duration was the convulsive involvement of the upper extremity.

While the majority of brain tumors are of a malignant nature, this does not preclude their operability. The endotheliomata and the gliomatous cyst are quite within the range of operable growths, and, if accessible, present no very great technical difficulties. But the highest attainment in diagnosis and surgical treatment has been reached in the "acoustic" tumors, which represent about 8 per cent of all intracranial growths. The discussion and presentation of this group has been treated by Cushing in his classical monograph.

It is a rather interesting commentary that the subtemporal decompression is resorted to much more infrequently than heretofore. This would

seem to imply that localization of the growth was more frequently attained. While this operation is often performed in the general surgical clinic and involves no unusual technical difficulties, the principles are not always understood clearly, if one may judge of some of the unsightly hernias that come to one's clinic. The protection offered by the temporal muscle is not availed of unless the attachment of the muscle is left undisturbed and the layers of muscle and aponeurosis are accurately approximated by tier sutures.

The tolerance of the brain to surgical invasions is always a source of surprise. Tumors of large dimensions may be removed with as little impunity as those comparatively small. Should there be uncontrollable bleeding, hemorrhage may be controlled by a tampon of cotton and the wound closed temporarily, to be reopened in a few days and the tampon removed.

I should not leave the subject of brain tumors without referring to the surgical aspects of pituitary disorders,—the last of the fields to be explored. The function of the pituitary body and its relationship to the other endocrine glands have been elaborated in the laboratories with great diligence, but with few exceptions the attempts to affect by glandular feeding the external influences of perverted function, have been disappointing. This, I take it, is due to the fact that, for the most part, the examples of dys-pituitarism are due, not primarily to deficient glandular tissue, as in myxedema from thyroid deficiency, but to new growths, adenomata, and various malignant lesions. One would hardly expect pituitary feeding could influence the clinical disturbances when the underlying pathology was a new growth.

Surgical intervention must be availed of as a matter of necessity to prevent total blindness and some of the other consequences of the disordered gland. Until quite recently there has been an open discussion as to which of two methods of approach should be chosen,—the transphenoidal or the transfrontal. At the present time, however, I am quite convinced, and in this view the majority of neurosurgeons will concur, that, when the lesion is well within the confines of the sella, the transphenoidal route should be given preference; and when the lesion is largely extrasellar or was primarily suprasellar the transfrontal approach offers the greater advantage. The decision will depend largely upon the interpretation of the radiogram. The technic of both procedures has been developed so thoroughly that

either route may be employed with a reasonable and equal degree of safety.

I have been very much impressed from recent experiences with the possibilities of *x*-ray and radium as supplemental to surgical therapy. In several cases, which had been referred to me because of a recurring hemianopsia after sellar decompression, I was gratified to find that after the use of *x*-ray and radium, not only was there an arrest of the progress of the disease as shown in the enlarging visual fields, but a return to normal.

The possibilities of *x*-ray, or more particularly radium, as an agency in the treatment of intracranial growths have not been given sufficient consideration. Particularly with radium has very little been done upon which to base accurate methods of application. I have now under way a research upon the effect of radium applied to normal tissue of brain and cord, and it promises to give us such information as will place upon an intelligent basis such necessary details as time exposure and milligram dosage, without which our employment of radium has of necessity been haphazard. When we take into consideration the comparatively slow growth of brain tumors, the freedom from metastasis, the ability to control the influences of encroachment upon the intracranial chamber by decompression, there would seem to be a field pregnant with possibilities for the influence of radioactive agencies in arresting growth or stimulating retrograde processes.

A review of the surgery of the nervous system at this time would be open to criticism if it did not include a reference to what we have learned from our experience with gunshot wounds of the peripheral nerves. In no other field has a greater opportunity been offered for genuine clinical research and patient investigation, in which the surgeon and neurologist worked hand in hand, investigations carried on, not only in the problems of nerve suture, but in much broader fields, such as the internal anatomy of nerve trunks and in the differentiation of the different types of sensations. The greater opportunity for research and investigation in peripheral nerve injuries was due to the fact that those injuries were not dealt with at evacuation centers, but months later in reconstruction hospitals. The Surgeon General's Office recognized this branch of surgery as requiring specially trained medical officers and equipment; and due preparation was made for the adequate study and treatment of these injuries. The program, unfortunately, for

the contribution of American surgeons to war literature, has been only half fulfilled. While splendid records in duplicate have been deposited in the Surgeon General's Office for future historians, these deal only with the history up to the patient's discharge from the hospital and service. The assignment by Congress of the care of the injured to the Public Health Service, the return to civilian practice of the entire personnel of trained medical officers; has left us with no program for that most essential chapter,—the end-results. But few of the injured remain in hospitals, examinations are made only in the interest of the War Risk Insurance or Vocational Board, and, unless some one in authority can be aroused to the importance of a "follow-up" system, much of the labors in the peripheral nerve centers, which is of both scientific and practical interest, will go for naught. In the program of the Interallied Conference, to be held in Paris next July, the "End-Results of Peripheral Nerve Surgery" has been assigned as a topic. At this moment there are, so far as I know, no officially assembled statistics upon which such a report can be formulated. The situation is deplorable.

Of the notable contributions by American observers which have been made or are in preparation, those which should be mentioned because of their originality are the studies of cutaneous sensibility, the study of the internal anatomy, the treatment of causalgia, and investigations of nerve regeneration and repair:

1. Stanley Cobb furnishes us with substantial evidence that leads to the conclusion that the epicritic and protopathic hypothesis of Head and his collaborators must be abandoned. These disassociations of sensation in peripheral nerve lesions arise not, as Head would have us believe, as representing fasciculi of varying functions, but from stimuli not only qualitatively different but quantitatively unequivalent. (These observations were made possible by the employment of standardized stimuli, such as the algesimeters designed by Ingham.)

2. The studies of Krauss upon the internal anatomy of nerves, with the aid of electrical stimulation of nerves exposed on the operating-table, are intensely interesting, and constitute a genuine contribution to the anatomy of peripheral nerves; however, they should be regarded as merely approaching the threshold of a virgin field, and are pregnant with great possibilities if, as I hope, the research shall be continued.

3. The practical value of Dean Lewis' method

of treating causalgia by the injection of 60 per cent alcohol should not pass unmentioned.

4. We await with intense interest the final report by Carl Huber upon his investigations of nerve regeneration and such practical problems as the technic of nerve suture and the value of the nerve graft. These investigations, fortunately, were made possible through his assignment by the Surgeon General to this particular duty and by the material with which he was supplied from the Army clinics. The publications from Huber's laboratory will be authoritative and, with those of Cole, should represent the most important laboratory contributions of the war on this topic.

But what have we learned of that essentially practical problem,—nerve suture? As with so many other fields, military surgery has been of no particular advantage here save for the unlimited opportunities to put to the acid test of practice every theory and to sort the good from the bad. We have learned to discard as useless the flap operation and nerve anastomosis, and we have had to accept with disappointment the almost universal failure of the graft. On the positive side, we confirmed the observations of Weir Mitchell in the Civil War as to the extraordinary tolerance of nerves to forcible stretching, and how to compensate for defects by stretching and transposition. But in the final analysis there remains to us only one method of restoring function,—simple end-to-end suture of healthy nerve segments. The end-result will be good, bad, or indifferent, according to the skill of the operator, to his judgment and experience, and not because of any fundamental innovations in technic that might be said to be war-bred. We have come to have a clearer insight into the cause of failures. Too much emphasis has been laid upon the methods of suture; under otherwise propitious circumstances functional recovery will follow in spite of a clumsy suture. The inherent cause of failure in nerve suture is largely a matter of nerve pattern. In nerves of mixed function, as the ulnar, median, and sciatic, the newly formed axes lose their way; sensory fasciculi proximal to the suture line find their way into motor fasciculi on the distal side, and vice versa. On this plan there can be no resumption of function. Thus only can be explained the almost uniformly good results in a nerve, as the facial, predominantly motor. In seven consecutive hypoglossal-facial anastomoses I performed while in the service, there is evidence of returning function in all.

The surgery of the spinal canal, though less

sensational than that of the cranial chamber, nevertheless offers the chance for a higher percentage of permanent results. Tumors within the spinal canal are predominantly extramedullary, and the majority of these endotheliomata. The latter, by virtue of their encapsulation, of their necessary limitations in size, of their definite signs of segmental location, offer every advantage for surgical attack. In doubtful cases, exploratory operation should be encouraged without delay in the knowledge that the operation is without risk and that in certain instances the clinical picture is not clear-cut. Too often has the physician been misled by the absence of pain as one of the initial symptoms. Laminectomy, *per se*, is peculiarly free from risk. I was surprised to find that in a large series of cases, including those of acute trauma, acute infections, and advanced malignant disease, my mortality was only 4 per cent. In the uncomplicated tumors of the cord and in all the operations upon the posterior roots, save one, there have been no fatalities.

Section of the posterior roots as a means of relieving spasticity has not fulfilled the promise of its sponsors. While in principle physiologically sound, it has been viewed by Americans only with disfavor. To be sure its try-out has been on a very limited scale, but the immediate results in this limited number fell far short of expectations. The unpopularity of the operation is attributable in part, I believe, to improper selection of cases in the first instance, and, in the second, to the greater ease and safety with which spasticity may be relieved by peripheral operations on the Stoffel plan. But the fundamental difficulty, of course, in either of these plans of arresting spastic states is that we cannot modify or control the primary lesion.

There is a limited field for section of posterior roots, I am sure, as a palliative measure for the relief of unendurable pain in malignant tumors of vertebral bodies, whether carcinoma or sarcoma. There is no greater agony and suffering than that which inevitably follows the infiltration of the posterior roots. In one case of inoperable sarcoma of the spine operated upon three years ago, I was agreeably surprised to find that, having relieved the patient of suffering, the tumor under the influence of x-ray and Coley's fluid had apparently disappeared.

The profession as a whole is not, I believe, aware of a simple but effective way of abolishing pain by section of an anterolateral column of the cord, as proposed by Spiller. This column con-

veys only sensations of pain and of heat and cold, but not of touch. Painful sensations can be completely and permanently interrupted by section of this column, only 2.5 mm. in diameter, at any selected level. To be sure the operation has a limited field, but in a properly selected case it is one of the most humane of all surgical efforts, and as such I recommend it to your serious consideration.

Neurosurgery must not be viewed from the narrow standpoint of the mechanics of a craniotomy or a laminectomy. The development of an appropriate technic is of course essential, but this represents the easily attainable function of the neurological surgeon. If there is to be such a specialty as neurological surgery, it must imply for the aspirant not only a groundwork in surgical technic, but also a familiarity with the pathology and physiology of the nervous system as they apply to the localization of pathological lesions and their recognition. The neurosurgeon with the co-operation of the röntgenologist and ophthalmologist, the aurist, and the neurologist, must work out his own problems. And again here I emphasize that on the general practitioner's intelligence and vision the initial step for the recognition and study of such cases usually depends.

In the future it should be the function of the neurosurgeon, as of those engaged in other special fields, to blaze the way for new trails, to open up new fields of thought, new methods of procedure. He will pass on to the general sur-

geon certain approved methods the details of which have been so meticulously elaborated that the operation has become a conventional procedure. The labors of the neurological surgeon must be directed, not so much to matters related to technic, important as it is, but should be applied to more fundamental studies. With characteristic American ingenuity the developments in technic have outstripped other matters of more far-reaching importance. All available clinical material must be utilized for an intensive study of the earliest manifestations of deranged function, so that earlier diagnoses may be made. The experimental laboratory should be a part of the fully organized neurosurgical department to supplement clinical studies. The function of the cerebrospinal fluid is still an open question; the pathogenesis of hydrocephalus is still in the field of speculation; the treatment of meningitis is a melancholy chapter of failures. These and other problems will at once suggest themselves as awaiting the enlightenment that may come from the future investigator. It has been but a few years since neurosurgery has been recognized as requiring special training and special facilities. Can it be said that its present attainments have justified this recognition? Its limitations and its disappointments are fully recognized and we must look with inspiring confidence to the future for new revelations, new vistas of thought, new plans of action to overcome obstacles that now appear insuperable.

INTERPRETATION OF THE ELECTROCARDIOGRAM IN CLINICAL MEDICINE*

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MINNEAPOLIS

Among the earliest cardiologists in medical history, we find the name of Erasistratus¹, who, living at Alexandria, about 300 B. C., devoted himself to study of the heart and pulse. It is recorded that, when summoned to a far eastern city, as a consultant in a case of the cardiac type, on examining the pulse of the patient, he found that "it gave a sudden leap, and then continued much faster than before." This was an apparent case of paroxysmal tachycardia.

One of the more recent advances in the study

of the heart has been in the galvanometric method of recording the heart's activities, for the application is relatively easy and results of precision are obtained. It is a method now recognized as a powerful aid in the diagnosis of cardiac disease, and is rapidly coming into use in hospitals and by internists in general.

The complete cycle of a beat of a normal heart consists of contraction of its chambers in an orderly sequence. Each contraction originates at the sino-auricular node², at the junction of the right auricle and the superior vena cava. This node³ is composed of a specialized network of

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nerve and muscle cells, as described by Keith⁴ and Flack. The contraction of the heart begins at the S A node, and spreads as a wave through the auricles. As described by Lewis⁵, it resembles the flow of a fluid when poured on a flat surface, the edges advancing in widening circles over the right auricle, then the left. This node is the normal pace-maker, and the orderly rhythm of the whole heart depends on its normal action. The waves of contraction pass through the auricle by the shortest route⁶ for the impulse to reach the ventricle⁷, and are carried to the ventricles by the picking up of the impulse by the auricular-ventricular node, or node of Tawara⁸. The A V node lies in the posterior part⁹ of the right auricle, near the septum below and to the right of the coronary sinus. From here the impulse is carried on a tract of neuromuscular tissue derived from the primitive cardiac tube, the "Bundle of His."¹⁰ This bundle runs forward and downward to the septum membranum, where it divides into the right and left branches. The right is compact and rounded, and is buried in the myocardium. The left is broad and flat, dividing, and lies just below the endocardium. Both are distributed to the musculature of the ventricles through the arborization of the cells of the Purkinje system. The result of this distribution is that, when a wave of contraction passes from the S A node through the muscles of the auricle, the wave is picked up by the A V node and passed on through the ramifications of the Purkinje system, and is distributed at about the same instant to the different parts of the ventricles¹¹, which then contract.

The nerve supply is derived from the vagus and sympathetic. Generally speaking, the vagus supplies principally the S A node, and the sympathetic and A V node. The vagus¹² slows and weakens (inhibitory action), and the sympathetic quickens and strengthens (accelerating action). The more recent work of Cohn¹³ brings out that both nerves depress, also stimulate the origin of the impulse and lessen conduction. Stimulation of the depressor is greater on the right, and lessened conduction on the left. The vagi rapidly affect the heart, while the accelerators are slow in action.

The normal cardiogram shows a constant group of movements for each cardiac cycle, the same in each of the three leads. Each group consists of three waves directed upwards, positive waves, at times two directed downward. Einthoven¹⁴, the father of the electro-cardiograph,

designated these oscillations as P. Q. R. S. T. In the normal cardiogram of the same individuals, practically the same at all times, the constancy is striking. In various diseases, with anatomical change or altered function, there is marked alteration in the cardiogram. Though the E. C. may vary somewhat, with change of position of the electrodes on the chest wall, or change of position of the heart within the chest, with respect to the accepted location of Di Dii Diii, the value remains constant.

From our studies of reflexes¹⁵ we have found that contractions of groups of muscles produce a definite type of waves, whether voluntary or induced by the reflex act. Applying these findings to the contraction of the heart muscle, the resemblance to that of the reflex group is marked. The wave of contraction of the heart muscle is evidenced in the cardiograms by a broad type of contraction wave. The reflex impulse itself produces a record similar to the rapid wave found in the E. C., which is the conduction impulse from the A V node, through the Purkinje system, the broad wave of auricular contraction producing the P wave, and that of ventricular contraction, the T wave, the passing of the conduction impulse through to the Purkinje system, a delicate rapid wave R. The degree of movement¹⁶ represents the current strength at that instant, not the full current generated, but the sum of the differences is recorded¹⁷, but it is sufficient to give us constant values, which may be compared and studied. These differences have oftentimes produced a misleading idea of the value of the E. C.

Hypertrophy of the auricles generally gives an increased P. Normally, the P is a small rounded elevation, 1.5 to 3.5 mm. in height. It may be inverted in Diii. The R wave is a delicate pointed wave 5 to 25 mm. in height; often in Diii it is minute. The distance from P to R, taken generally in Dii, is from .12 to .18 seconds in time, passage of the normal wave of contractions from the S A node to the A V node. This time gives definite information as to functional condition of the tissues through which the impulse passes. The normal width or the time element of the R wave is about .03 sec.

The normal T wave is 2 to 4 mm. high, and may be inverted in Diii. It is from .30 to .40 sec. in width. Following the T wave comes the diastolic period of rest. The Q and S waves do not generally occur in normal cycles. The complete cardiac cycle is estimated, beginning at the

P wave, the auricular wave of contraction, and then through the ventricular complex represented by the R T; then occurs the diastolic period of rest evidenced by a straight line on the record up to the following period. In increased heart-rate, the cycle is shortened by loss between the T and P, from the diastolic period of rest, and never the auricular or ventricular portion, in normal records.

The recognition of the various types of complex and their interpretation with a careful study of the normal and the differentiation of the abnormal, have opened up a new field; therefore, by means of this instrument, we have a precise aid in cardiac diagnosis. In the interpretation of the cardiograms the following routine is employed, as a simple and easy method of charting the data.

Rhythm.—Often to the ear or to the finger the heart appears rhythmic, but with the record before you, many times arrhythmia will be evidenced. There are three forms of importance: sinus, extra systoles, and fibrillation¹⁸. Sinus is due to the variations in intensity of vagus innervation, the pulse increasing or slowing with inspiration or expiration. In such cases the E C shows only a lengthening or shortening of the diastolic interval, the T P interval without other change. Extrasystoles are contractions of the heart, originating away from the S A node. They may occur just ahead of the normal contraction, and replace it. Ventricular impulses originating from the S A node are termed *nomotopic*¹⁹, and an impulse originating at some point away from the S A node is termed *ectopic*. *Fibrillation*²⁰, or arrhythmia perpetua, a completely irregular type of cardiac action. The auricles are distended and exhibit incoordinate waves that shower irregular impulses upon A-V node, many of which are carried on to the ventricles, producing a rapid irregular ventricular cycle that is definitely shown by the E-C. The P wave is absent, and in its place is a rapid series of oscillations, over-riding the entire cycle.

Rate.—This is accurately measured on the E-C. With a pair of dividers, the time element is estimated from 3 to 6 seconds, and then by measuring this same time element on the E-C the auricular and ventricular rates may be definitely estimated.

Tachycardia, or rapid heart action.—We term a continued rate above 100 *tachycardia*. It may be simple or pathological²¹. A simple tachycardia portrays all the elements of the cardiac cycle.

The rapid rate is effected by the loss of T-P interval. In *simple tachycardia* the onset is a gradual increase to the high rate, then a gradual remission, a simple exaggeration of a normal cycle. In *pathological tachycardia* the onset is an abrupt rise to the high rate, there to continue from a few seconds to hours, then a sudden return to a normal rate. This type develops at a new center, away from the S A node that is under less control than normal, so that a rapid rate is readily produced.

Auricular Flutter.—That is another type of rapid action in which the auricle originates rapid impulses, two or more times the rate of ventricular response, giving the so-called 2-1 or 3-1 rate. Records may show as high as four hundred auricular waves per minute, and ventricular response may be irregular. Exercise, fever, drugs, defective elimination, and hyperglandular secretion are amongst the causes of simple tachycardia. An interesting form of E-C is usually seen early in hyperthyroidism, the so-called 'arched type,' an arched effect of the T-P.

Bradycardia, or slow cardiac action.—This action is generally below 50. Some people naturally have a slow pulse, and slow pulse may be apparent or real to the examining finger. In the apparent cases, some of the beats are so feeble that the ventricle does not open the aortic valves, hence no wave will reach the wrist²². At times extrasystoles will alternate with normal beats, so that the pulse will be apparently halved. Again, as in alternans, strong beats alternate with weak beats, the stronger beats alone reaching the wrist. Or in complete block, with complete dissociation of auricular and ventricular contraction, the auricle may be contracting 2, 3 or 4 times to each ventricle cycle, which generally is a slow rate, 20 to 40 per minute. These varying forms of bradycardia are readily seen in the E. C.

*Extrasystoles*²³ are designated as to their point of origin, which is in some part away from the S-A node. Auricular, nodal, and ventricular occur earlier and replace the normal portion of the cycle, thus producing an arrhythmic rate. *Auricular*²⁴ rise from some point of the auricle away from the S-A node, and are different from the normal P wave. The P-R interval is generally lessened; the following ventricle cycle generally is normal in form, though at times a distinct change in ventricular complex is observed.

*Nodal*²⁵, when the S-A node fails to act, the A-V node will initiate its own rhythm, as in com-

plete block. In the extremely rapid heart action, as in paroxysmal tachycardia, the A-V node usually formulates the rhythm. In a nodal rhythm or extrasystole there is a normal ventricular complex with the absence P wave.

*Ventricular*²⁶, extrasystoles, produces the most marked deviation we have from the normal complex, which is replaced by a greatly exaggerated diphasic wave, which represents a full current strength of the developed contraction. These atypical contractions are constant in form, depending upon their origin in the right or left ventricle. The direction of the primary as related to the final phase, indicates the points of origin of the extrasystole. The right ventricular extrasystole, begins at the base line, passing upwards 15 to 30 mm. or more, and returning past the base line, a widened high form R wave, then downward making a wide diphasic wave, similar to a widened T wave, then returns to the normal line. *Left* ventricular extrasystole is a mirror picture of a right. Beginning at the base line, passing downward 15 to 30 mm. or more, and returning past the base line, a widened deep S wave; then upward making a wide diphasic wave, similar to a widened T wave; then returns to the normal line. These ectopic contractions are due to some irritation of the cardiac tissue, either mechanical or chemical. They are not indicative of serious cardiac involvement, for gastro-intestinal disturbances may produce them. If present in great numbers, with evidence of impaired myocardium, then they are a sign of more serious import.

*Hypertrophy*²⁷ of the auricles is shown by an enlarged P wave. This form of exaggerated and diphasic, was formerly considered evidence of mitral disease, indicates auricular hypertrophy. At times there is evidence of a continued auricular action²⁸,—that is, the left auricle continues to hold in systole against the ventricular action, producing a long-continued auricular action that at times encroaches on the T wave, though the three leads may show a slight difference in regard to the P-R interval. This difference is due to lead inception, and the length of the auricular action is readily shown. We designate this final auricular action positive. At times it enters into the form of the R wave, producing notching and widening of the R wave, or it may appear as a so-called Q wave, and when found on the far side of R makes a shortened form of S wave, which differs from the S wave in that it is broader. The S wave²⁹ occurs

in Di as evidence of right ventricular hypertrophy; in Diii as evidence of left ventricular hypertrophy. At times occurring in Dii, though normal at times at the end of expiration and beginning of inspiration, is evidence of asynchronism of the ventricles, the S evidencing the slower action of the left.

Increase of the muscle mass of either of the two ventricles produces a definite alteration in the form of the E-C. A right ventricular hypertrophy is evidenced by a short R1, a deep S1, and high R3, with absence of S3.

A *left ventricular* hypertrophy is a mere reversed picture of this, that is a high, R1 absence S1, a short R3, and a deep S3.

*Drop Heart*³⁰.—In the human at birth we have a narrow low lying heart, with the two ventricles of approximately the same size. The left heart gradually develops, giving a slight preponderance over the right. At times the heart fails to develop properly, and the left heart remains small. A definite form E-C is produced with a minute first lead. At times a hypertrophy may develop; then the heart appears to the x-ray as normal in size.

Congenital malformation of the heart³¹ produces marked E. C. changes, dependent on abnormal distribution of muscle mass. With the normal heart at birth, the ventricles being relatively the same size, the heart in a low position. As the child develops there is a gradual increase with preponderance of the left ventricle, so that in congenital lesion, depending upon the site of the lesion, there is hypertrophy of the ventricle of that side, accompanied by auricular hypertrophy; therefore the E. C. shows a hypertrophy of one of the ventricles, generally with auricular hypertrophy, and also "continued auricular action" so that the P-R interval varies in the three leads, but the continual action of the auricle holding against the contraction of the ventricle is observed, producing a splitting of the R wave (the D T being minute). The R wave generally is high in Dii, the hypertrophy in general complex is large in Diii.

*The T wave*³² is normally a broad pointed wave from 30 to 40 seconds in time and from 3 to 5 mm. high. The T wave normally is upright in all three leads, occasionally inverted in Diii. In myocarditis³³ i and ii may be inverted, generally accompanied by a small R wave. The T wave is inverted digitalis medication, so that now the proper method of dosage is to give sufficient to invert the T wave, and produce a slight

delay of the P-R interval, and not, as formerly, give sufficient to produce a pulsus bigeminus, which is about twice the proper dosage.

One of the more recent advances in cardiac study has been that of functional activity; for, in normal hearts, the normal cardiogram is constant at all times in the same individual, and indicates a passage of the impulse of the contraction through the heart. Any interference with the passage of this wave will be indicated by a changed complex, which is closely associated with conduction changes in the tissue, so that we have a means of determining the portion of the conduction system which is involved. Impairment between the S. A. and A. V. nodes is indicated by increase of the P-R interval. The same impairment also occurs beyond the A. V. node, in the "bundle of His" and the two branches, the arborization, and in the Purkinje system. The impairment of these definite portions is evidenced by a change in the electrocardiogram. The normal spread of the impulse is hindered, because the conduction system has not recovered from the preceding contraction, and this hindrance generally disappears with prolonged ventricular rest. This type is due to a disturbance of the normal function of the conduction system, and may be termed *functional*. It is due to a toxic condition, arising from products chemical or inflammatory. Another form may be due to an *organic* lesion, which may involve any portion of the conducting system or the adjacent myocardium, such as a gumma or fibrosis or small hemorrhage.

*Delayed conduction*³⁴ is evidenced by an increased P-R interval, above the normal .18 seconds; at times it may exceed .40 seconds.

*Complete heart block*³⁵.—Impulse may be completely cut off between S. A. and A. V. nodes; the S. A. node then continues a definite auricular rate, and the A. V. node assumes the independent site of impulse origin for the ventricle, generally slower than the auricular. The electrocardiogram shows a rhythmic series of P waves and, in addition, a rhythmic series of R-T waves of a slower rate, which causes a frequent over-riding of P and T. Oftentimes the condition producing the A. V. damages the conduction tissue in the branches also of the ventricular system, so that we may have, in addition to complete block, branch block and arborization block, or the individual portion of either branch or its terminals may be involved.

Branch block.—Impairment of conduction

localizing in either the right or left branches of the bundle, produces a definite type of the E. C.³⁶ Either a few fibers or the entire branch may be involved, which produces an increasing complex of adherent form. If the right branch is completely cut off the impulse passes through the left branch alone, and when the ventricle contracts, then the contraction passes across to the right ventricle. If the left branch is cut off, the impulse passes through the right side and back to the left. These produce a definite E. C. form. In the *right branch* block, R1 is high, widened and notched, S3 is deep, widened, and notched. The T is inverted, P2 R2 increased. The notching in R1 S3 is oftentimes due to P or the continued auricular action. In the left branch block we have a mirror picture of the right branch block, S1 deep, widened, and notched, R3 high, widened, and notched, T1 upright, T3 inverted.

*Arborization block*³⁷.—The ramifications of the Purkinje system are involved, even as the rest of the conduction system, producing a definite type of E. C. Following the same complex as the aberrant form seen in branch block with a complex much shorter in length, and shows great splitting of the R. S., and widening of the ventricular complex. These abnormalities show a change principally in the initial portion of the ventricular complex, and differ from those changes with branch block or extrasystoles. These abnormalities are dependent on derangement of the conduction, which prevents the passage of the wave of excitation along the usual paths or at the usual rate. Variations in the form of these abnormalities indicate generally a partial recovery following a prolonged ventricular rest.

COMMENT

Keeping in mind impulse-formation and the conduction of the impulse through the auricle and on through the ventricle, we see that the auricular contraction and the ventricular contraction are evidenced by the P and T waves; that the various parts of the cardiac cycle have a definite time element; and that interference with impulse formation and faulty conduction will produce a complex that is deformed, not only in rate, but in the shape of the various elements which go to form a complete cycle.

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ENDEMIC OR RESIDUAL TYPHOID FEVER IN MINNESOTA*

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MINNEAPOLIS

Up to quite recently water was thought to be the chief and only source of typhoid fever. This was a natural conclusion, since water draining from human habitations is liable to be contaminated. Fortunately, typhoid germs do not multiply or live in water very long. Few typhoid germs, according to Rosenau of Harvard, survive longer than one week in water; therefore human discharges containing typhoid organisms must be constantly added to make water continuously dangerous. Sunlight, aëration, saprophytic germs, and great dilution of sewage tend to lessen the danger from water infection.

Numerous large epidemics have resulted from polluted public-water supplies in the past. Municipalities, realizing the danger, have adopted various measures to protect their water supplies from pollution, so that at the present time water-borne typhoid is in reality very rare. Nevertheless, the idea of water-borne typhoid is so firmly fixed in the minds of medical men that any cases occurring in their territory are often attributed to it. Frequently the first intimation that the State Board of Health has of the disease is when a sample of water from a supposedly infected well is received. The request is occasionally made to find the typhoid organism in the water, but the isolation of typhoid bacilli from water is so rarely successful that to attempt it is

impractical. Failure to find typhoid bacilli in water does not insure a safe water.

The amount of typhoid fever occurring in a community after a safe and sanitary water supply has been provided is called *residual* or *normal* typhoid. Residual typhoid is synonymous with endemic typhoid. During the past seven years in the epidemiological study of typhoid fever in this state, very little incriminating evidence has been found against water and very much against the typhoid-carrier.

Any usual case or the ambulant type of typhoid case may be the source of other cases, either before the disease is recognized or from improper management of the case, but the disease would soon die out in any community if it were not for temporary and chronic carriers. The more cases of typhoid fever occurring in a community, the greater the number of temporary and chronic carriers, and thus opportunities for carrier infection are multiplied.

The *modus operandi* of infection is as follows: The hands and fingers of the carriers are soiled while in the toilet. They are either washed improperly or not washed at all. Remaining germs are soon transferred from the hands to milk or to some other food which may also be an excellent culture medium.

Women carriers are more frequently detected and, generally speaking, are more dangerous

*Presented before the Park Region District Medical Society, Fergus Falls, Jan. 7, 1920.

than men, owing to their usual occupations bringing them in contact with food consumed by others. Careless, ignorant, and dirty carriers leave a larger trail of typhoid fever in their wake than careful, intelligent, and cleanly ones.

The following illustrations show how dangerous typhoid carriers may accidentally produce typhoid fever in a community:

In Donaldson, a village of 250 inhabitants, in the Red River Valley, periodic typhoid of unknown source occurred during a period of ten years or more. Everything imaginable was suspected as the source of the infection. Water, as usual, came in for its share of blame. Owing to the alkaline condition of the deep wells and to the contamination of the Red River and its tributaries, the people of the village were compelled to rely upon cisterns or to haul water several miles from a spring for their drinking water. Therefore every new case of typhoid which developed in the vicinity resulted in re-cleaning of cisterns, replacing charcoal in their filters, or some other unnecessary work. Ice, too, was thought to be the source of the trouble, though many cases of typhoid developed in homes where ice had not been used. Some thought that dust or offal of birds was infecting their cisterns, and some that the air itself was infected.

At the request of the attending physician the following cases were investigated in June, 1913: Two brothers, aged 3 and 5, developed typhoid fever seven and fourteen days, respectively, after moving from Donaldson village to a nearby farm. Later the mother developed the disease and died of intestinal hemorrhage. The cistern on this farm had been filled with snow and water from an improvised reservoir used for watering stock, and made by scooping out the top soil which has clay underlying it.

It was later learned that these children drank milk from Mrs. O.'s dairy before they moved to the country. Mrs. O., aged 57, had had typhoid fever in 1910. During the winter months she lived in Donaldson village and incidentally sold milk to the villagers. In the spring she moved to her farm in Davis Township, where, in June, a laborer on her farm became ill with typhoid fever.

A list of typhoid cases occurring in Donaldson from 1910 to 1913 was compiled. There were 20 cases in all; 2 in 1911, 10 in 1912, and 8 in 1913. Thirteen of these cases had taken milk from Mrs. O. during the three weeks previous to

their first symptoms. Four recovered cases had moved away so that definite data regarding their milk supply could not be obtained. Two cases boarded at the hotel and may have used milk from Mrs. O.'s dairy, but the landlord would not incriminate her.

It is interesting to note that two of the cases which had moved away and two that were sick at the hotel were taken ill during the winter months when Mrs. O. sold milk in the village. One case of typhoid was imported from Hallock. The 13 cases who consumed milk from Mrs. O.'s dairy, together with the four others who probably used milk from her dairy during the three weeks previous to their first symptoms, pointed to Mrs. O. as a suspected typhoid carrier. Blood specimens from Mrs. O. showed Widal reaction absent. Typhoid bacilli were not isolated from her discharges in but one test made. Unfortunately, owing to lack of field workers, no later specimens were obtained for examination. From the epidemiological study alone it was concluded that Mrs. O. was a typhoid carrier and she was ordered to discontinue her dairy. Instructions were given her as to precautions to be taken to protect her relatives and friends. The villagers had read about "Typhoid Mary," and readily understood how to protect themselves against further infection from Mrs. O.

No further cases have occurred in Donaldson since thus advising and instructing Mrs. O. in 1913. This record itself is confirmatory epidemiological evidence of Mrs. O. being a carrier.

The following also illustrates how a carrier may infect milk in a small dairy and cause typhoid to continue in a community for years hardly noticed.

Mrs. B. lives in Stillwater, a city of unusual sanitary surroundings. The city has a sewerage system and an excellent water supply. Mrs. B. and her husband, both 68 years of age, had had typhoid fever twenty-eight years before. At the time of the investigation they owned two cows and had ten milk customers, mostly neighbors. Mr. B. had chronic rheumatism, and therefore his wife did the milking. Mrs. B. was known as a very neat housewife.

A boy of thirteen developed typhoid fever in August, 1914. The local health officers suspected fruit as being the source of the infection. This boy before becoming ill drank milk from Mrs. B.'s dairy. During the investigation the local health officer stated that one year previous to this case he had attended a case that was tak-

ing milk from Mrs. B. The family physician then stated that he himself contracted typhoid fever in 1909 while taking milk from Mrs. B.

The dairy was visited, and blood specimens were obtained from the entire family. Blood from Mrs. B. alone showed Widal reaction present. Discharges of Mrs. B. were collected, and bacillus typhosus isolated.

The local health officer was notified that Mrs. B. was a dangerous typhoid carrier and that she should discontinue her dairy. He visited the dairy, and, feeling sorry for her, permitted her to continue the dairy providing she did not handle the milk. Within a month two more cases of typhoid developed among her customers. The dairy was then closed by order of the Executive Officer of the State Board of Health. During the previous seventeen years, 16 cases of typhoid had developed in consumers of milk from Mrs. B.'s dairy. The supervising of Mrs. B. and two other carriers, one of whom originally had a small dairy in Stillwater, has placed a quietus on endemic typhoid in Stillwater. The physicians in this city have ceased to wonder at the source of endemic typhoid fever.

The following illustrates how dangerous a carrier may be to the immediate family and relatives. Several miles from Lake Park, in Lake Park Township, Becker County, lives a widow 72 years of age. She nursed her husband, who was ill with typhoid in 1875. At that time she was run down and had diarrhea, but her condition was not diagnosed as typhoid fever.

In 1882 her son, aged 14, died of typhoid fever, and a hired man developed the disease.

In 1883 twin daughters, aged 10, and a married daughter had inflammation of the bowels. No physician was called. One of the twins died.

In 1892 a physician broke up a "touch of typhoid" in a son, aged 18.

In 1902 a hired man 29 years of age had typhoid fever.

In 1909, a son, aged 29, and a niece, aged 9, had typhoid fever.

In 1912 three neighbors had typhoid fever after visiting this home.

In 1913 a son, aged 32, had typhoid fever.

In 1914 a married daughter and four of her children had typhoid fever.

In 1915 a laborer who came to the farm on September 28 developed typhoid fever on October 18.

Total number of cases was 19. All were members of the family except the three farm laborers and three neighbor visitors.

All this history of typhoid fever in this family began to be talked about in the country. They began to experience difficulty in obtaining farm help. The family, being very conscientious, began to talk about selling their excellent farm of over two hundred acres. They thought the disease was connected in some obscure way with the farmhouse or buildings. They appealed to the family physician, who suggested that they abandon their well and drill a new one on the top of the hill, which he thought might solve the difficulty. An epidemiological investigation was made. Blood specimens were taken from the entire family. Mrs. C.'s blood showed the Widal reaction atypical. Typhoid bacilli were isolated from her feces, proving her to be a dangerous carrier. Mrs. C. and her family were informed what precautions to take, and no more cases of typhoid developed from this source.

In Normania Township, Yellow Medicine County, endemic typhoid had been present since 1904. The source of infection in three instances was given as (1) water from a shallow well; (2) water from a 160-foot well drilled through an old tubular well; (3) polluted water from a tubular well 28 feet deep.

In an investigation in April, 1914, of 5 primary and 18 secondary cases which occurred in three families, two sisters, one of whom had had typhoid in 1913 and the other who denied having had the disease, were suspected as carriers by the writer. Since, however, the Widal reaction was absent in blood specimens from both suspects, the stools and urine were not searched for typhoid bacilli at that time.

Between April, 1914, and May, 1916, 7 additional cases occurred in this community. In May, 1916, an attempt was made to obtain blood specimens and discharges from everyone in the neighborhood who gave a previous history of typhoid fever or was suspected of being a typhoid carrier. In all, 50 isolation specimens were obtained. Several ignorant persons refused to co-operate. As a result of these tests, 5 dangerous carriers were found in Normania Township. Almost a pure culture of typhoid bacilli was found in the feces of the young woman who was first suspected as being a carrier, although she denied ever having had the disease. These carriers were instructed in the necessary precautions to be taken, with the result that no new cases of typhoid fever have developed in Normania Township since the second investigation.

It is difficult to state definitely how many of the thirty cases were infected from the above

mentioned young woman. She was a domestic and moved about considerably, and probably was the chief cause of typhoid fever. She and her mother both were carriers. They frequently had parties at their home, and a number of the cases had been their guests shortly before becoming ill. The mother and daughter often carried milk and other food to weekly sociables, which doubtless play some part in the spread of typhoid.

The final investigation thus proved that the real source of the typhoid in Normania Township was resident in typhoid carriers. Numerous other investigations might be cited in which carriers have been found to be the cause of one or more cases of typhoid.

In all, exclusive of State institutions, 70 typhoid carriers have been found by the Division of Preventable Diseases during the past six years as a result of careful epidemiological investigations and of careful bacteriological technic. They are card-indexed and under the supervision of the State Board of Health.

Health officers and physicians are urged to assist in such supervision through notifying us of change of address or of occupation of a known carrier.

We also have listed a considerable number of persons suspected of being typhoid carriers from whom it has been impossible to obtain specimens, or from whom only one or two specimens have been examined with negative results.

In order to further reduce the incidence of typhoid fever in this state, greater attention must be given to the prime source of the infection, that is, the individual who harbors typhoid bacilli for a longer or shorter period. Every frank and every suspected case should be reported promptly to the State Board of Health, together with all available data.

The occupation of the patient should be given, and, if the patient has been away from home within three weeks prior to his illness, it should be stated exactly where he has partaken of food and with whom he has been associated. Names and addresses of all visitors in the patient's home during three weeks before illness should also be given.

A specimen of blood should accompany or precede the report. If the case is clinically one of

typhoid fever and the Widal reaction is absent, further blood specimens should be forwarded.

More field workers are needed to do more intensive work in the search for and the supervision of typhoid carriers and in order to make it possible to investigate every case of typhoid fever as soon as it is reported.

SUMMARY

1. The dangerous typhoid carrier is the source of nearly all endemic or so-called residual typhoid fever in Minnesota.

2. A carrier working in dairies is especially dangerous.

3. A carrier should not be employed as cook, domestic, waitress, or nurse.

4. A carrier, temporary or chronic, should be warned regarding the things to be avoided in order to prevent transmitting the disease to the immediate family, relatives, and friends.

5. By the identification and proper supervision of typhoid carriers this disease can be prevented.

WANTED—COUNTRY DOCTORS!

The country doctors are moving to town, according to a leading medical magazine. Thousands of the smaller communities are without doctors. There are two reasons for this—first, the war, which opened new avenues of usefulness and opportunity to many of the physicians who entered the service; and, second, the automobile, which makes it possible for the doctor to live in the larger community, keep in touch and compete with the city physicians, and still take care of a large part of his outlying practice.

Because of these two factors the little town far from the city suffers without a doctor, or is able to get one only after a long delay and anxiety.

To offset this shortage the magazine offers this suggestion:

"Why shouldn't some of the city doctors, especially those getting along in years, who feel as if they would like to slow down a little, move into some of the beautiful country villages, which nowadays have most city comforts and many advantages which the city does not possess? In such a place a home can be bought for a song, with peace and quiet, and a garden spot, fresh fruits and beautiful scenery, and an increasing number of people of large ideas, and poetic and literary instincts, and little money!"

The suggestion sounds practical and tempting. Almost anybody might wish he were a city doctor, so he could step up first.—*Red Wing Republican*.



W. A. JONES, M. D., *Editor*

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MAY 1, 1920

MINNEAPOLIS CLINIC WEEK—THIRD ANNUAL MEETING

The third annual Clinic Week has gone by, and, apparently, was as successful as in former years, or even more so. The number of registrations by visiting physicians was increased, and the number from within the city showed a better attendance. In all there were 405 registered. Of this number 287 were from out of town, and 108 were Minneapolis men.

Rather a strange feature of the registration was the evident unwillingness of some of the out-of-town men to register. The committee has speculated as to the cause of this failure to register. Perhaps some of the men feared there was a registration fee, but we have kept away from this because we felt that Minneapolis men could give their clinics without requiring a fee from those who attended. At all events, it is hoped that before another year the men will feel free to register, as we take a certain pride in knowing that the number in attendance warrants the continuance of the Clinic Week.

The attendance at the clinics was more evenly divided than in any year before,—that is, the clinics at the various hospitals had a larger number in attendance; and, from what the Editor has gleaned from the visitors from various parts of the country, the clinics were very satisfactory. One man said he thought they were as good as any clinics he had attended; another said he had learned more during Clinic Week than he could

learn at either the State or the American Medical Association meeting because things were brought before his eyes in such a way as to make attendance profitable and instructive. Several other men were quoted as saying that everything was "perfectly fine," and that they had no criticism to offer, and would come again next year.

It was quite evident that when Dr. Charles Harrington Frazier delivered his address on Tuesday night there was to be a full attendance; 344 men sat down to the banquet. Dr. Frazier is clinical professor of surgery in the University of Pennsylvania, and his address on neurosurgery was a scholarly one. Perhaps to some of the men who were overseas and participated in the surgical work during the war, there was not much that was strikingly new; but the man, in general, who heard Dr. Frazier went away feeling that he had gained many new points and had found that some of the old points that he had believed could not be improved upon, were much more clearly elucidated, and he was given new ideas upon which to graft some of his own.

The address appears on another page.

There was less friction in the movements of the Clinic this year than usual,—that is, everything ran along fairly smooth lines. Physicians in attendance were all more familiar with the Clinic, and for that reason, perhaps, got more out of it.

SEXUAL ANARCHY

The editor broaches this subject with a good deal of hesitancy, and yet the subject is one that must be faced at some time because the evil has reached a very critical stage in the life of the nation, and it seems as if all of the old passions and orgies of ancient Egypt, ancient Greece, and ancient Rome were being revived. At all events, nothing done since those days, from the sensual point of view, seems to have been unknown in those nations. With our knowledge of present-day events we are able to understand more fully what the debauches and immoralities of Egypt, Greece, and Rome meant.

In olden days the statue of Aphrodite, alleged to have been sculptured by Demetrius, which represented the Venus of our day, was something that was worshipped by the populace. She was the goddess of all that was sensual and sexual and sacred, and her imitators were numberless. According to history, there was an established school in Alexandria where children were taken to be trained in the art of love. When they had

passed the age of puberty they became candidates and, eventually, *courtesans*, who were exceedingly popular and were held in high places, and sometimes were the advisors in royal councils; but they were all looked upon as sacred women. That seemed to be the spirit of the age. And in that same mythological period, no woman was considered sacred until she had sold herself in harlotry and given her gains to the shrine of Aphrodite.

The good king Constantine, when he assumed power, at once abolished this public sexual offering, but he could not abolish the flame which was instilled in men and women. From all reasonable sources this state of sensuality has been much in evidence for centuries with but few interruptions. And now, since the period of war and of great excitement, the strain of daily life has accentuated the interest of people, old and young, in their passionate desires. It is asserted by some that, since prohibition has come into vogue, intemperance in eating, in amusements, and in the pursuit of sexual pleasure has increased immeasurably.

Today we are confronted with a very serious problem, particularly among school children, as well as among those who are supposed to have sufficient self-control to keep them within the bounds of propriety. The conditions in our public schools all over the country are appalling, due to the inability of the parent to instil into the youthful mind cleanliness and freedom from vulgarity. Consequently, in an ill-managed household, where the first object of the parents seems to be their own self-amusement, the child is neglected and allowed to associate with children who are commonplace and unclean, and when the child arrives at the school the teacher is supposed to take the place of the parent. This, of course, is an absurdity, and reflects discredit upon the family life and the bringing up of children. When these young people reach the high school period they have grown into a state of indifference as to formalities, virtues, and culture that has caused great concern among the officials who have charge of their education. They are not infrequently found in corridors and corners, embracing and loving one another in a manner past all degree of decency, and no one knows definitely what many of these youths do when school is over. A number of them have been found to live according to their own sensations and emotions. A large number of them have gotten into the field of venereal disease,

and a proportionate number of the girls have become pregnant.

The remedy seems to lie in the home, but many a home does not seem to appreciate the gravity of the situation. Of course, this is not meant to infer that there are not well-organized and well-managed, cultured homes where children are brought up free from contact with uncultured or immoral people. There are many fine young boys and girls who have been instilled with the finest religious impressions that have ever been taught. But the great class who are denied such home influence are the ones who need reformation, and unless it begins at home the problem for the teacher, for the doctor, and for the public, becomes greater with every decade.

These things cannot be overcome through legislation. It does no good to punish the boy and the girl for their misdeeds,—in fact, it seems at times to make them rather worse than better to attempt severe methods of reform. The hope lies, outside of the family, in education in sex matters, and this is now becoming an important part of our school curriculum. It is quite true, too, that the mere mention of these subjects inspires boys and girls, out of curiosity, to learn what it means, but in the end proper education will prevail, and these children will grow into normal and moral men and women.

THE BY-PATH FOR THE MEDICAL MAN

No physician will have rounded out his course of life without interesting himself in something other than medicine, or, if he chooses to make medicine the only thing in his life work, then he must interest himself in many of its branches rather than tie himself down to one special thing.

Dr. A. W. Abbott, of Minneapolis, in a few remarks to the medical men at a recent banquet urgently advised those who heard him to keep up with the various branches of medicine as much as possible; for, to do so keeps alive a man's interest in his own special department and diverts his mind to other departments, which broaden his viewpoint and enable him to look upon his patients from many angles. We happen to know that Dr. Abbott himself has indulged his fancy in research work, both chemical and microscopic, as well as bacteriologically and embryologically. He has thus kept in touch, not only with the fundamentals of the individual, but with the causative factors which relate to disease.

Most of us waste a good deal of time outside of our medical work. We read books or papers

that are light, that require no mental concentration, and that are merely entertaining, amusing, or sleep-producing. This is well enough at times, but there are times when a man should stop and consider seriously his future attitude toward life and himself. One who develops in early life an interest in medicine, can develop equally a keen interest in something unallied to medicine. Perhaps the most common by-path over which the doctor treads is that of music, and it is not uncommon to find medical men who are readers of music, who play well, and who divert themselves by either instrumental or vocal accomplishments. Many physicians play the violin or the piano, and not infrequently they play the pipe organs in church, and many of them sing remarkably well.

There is another step from this musical talent to that of the arts and sciences. It is true that not many medical men are qualified to dip very deeply into art, but at least they can cultivate a taste for something that is fine and artistic and pleasing. In our older cities, in the east particularly, some physicians of means have their own private collections of pictures, prints, etchings, and other studies. They afford a great deal of entertainment, and product a rest and relaxation that are not obtainable elsewhere.

Then, too, there is the physician who reads and who writes of things only indirectly applicable to medicine, and history goes back many centuries, showing that medical men have become celebrated authors. In olden times many medical men had the gift of writing, and they wrote some incomparable works—for instance, tales that have lived for centuries, and are as good today as they were when first written.

John Keats, in his boyhood life, was apprenticed to a surgeon, and he went to London in the hope of receiving hospital instruction. As an apprentice in surgery and medicine was looked upon as an inferior person, perhaps for this very reason Keats wrote something quite different from anything medical. He wrote "Hyperion," "Ode to a Grecian Urn," "Eve of St. Agnes," and "Lamia." Smollett, who was also apprenticed to a surgeon, after serving some years as a ship surgeon, acquired an intimate knowledge of the nautical world, and he was able to describe sailors with such truth and accuracy that all others who followed in his footsteps were simply trailers. Goldsmith had the degree of M. D., which he pretended he had received at the University of Padua, but he was a poor doctor and soon gave up this occupation to become a writer.

This course might be followed by a number of doctors now in the profession, and illustrates the necessity, sometimes, of giving up a profession to become either an artisan or a laboring man.

Many other men might be mentioned as among the beginners in literature who had the title of M. D. Locke, the philosopher, was a physician, as was George Crabbe, the poet. Among the men remembered at the present day were Oliver Wendell Holmes, John Brown, Wm. H. Drummond, Weir Mitchell, Virchow, J. J. Holland, Clemenceau, and Conan Doyle; also John Arbuthnot, of whom it is said that his depth of learning, the brilliancy of his wit, and his warmth of heart were exceeded in no man.

Doubtless there are many other medical men who write under pseudonyms, and write either to soothe their own feelings or to protect themselves from what they might call unjust criticism from other physicians. Of course, the man who spends a great deal of time as a writer is not always a good doctor. As a matter of fact, he leaves something to posterity which inspires a man to do something outside of his usual narrow field in medicine.

A number of men who are entitled to the degree of M. D. find their recreation in physical instruction and physical training, and it would seem as if this addition to their medical course or medical practice would keep them in the pink of condition. And yet how frequently do we find these men over-straining and over-training themselves! They seem, sometimes, to lack just that balance which is necessary between the medical mind and the mind of the enthusiast in physical development.

There are those, too, who seek out-of-door amusements,—such as golf, tennis, and even baseball. And these men sometimes give up a career in medicine to follow a career of high-grade sports. It is quite evident, however, that they were probably never deeply interested in medical topics. They found the establishment of a practice a slow and tedious process, and gave it up for something more exhilarating and more exciting.

The medical man who becomes a teacher and devotes his whole time to this work is usually a theorist. He does not carry with him the broad view of the medical field. He prefers to narrow his life into something that is more routine, less remunerative, but to him an absorbing subject. He is a man much needed, and, doubtless, he finds that he can expend some of his teaching energies on other subjects than medicine and perhaps

thereby makes himself broadminded and more liberal in his attitude toward others.

At all events, our thought is simply to suggest that medical men should have a fad, a fancy, or an occupation outside of the field of medicine. They should acquire accomplishment—if you please, an art or an emotional study—upon which they can expend their surplus energies or upon which they can temporarily divert their minds from a serious and sometimes an exhausting profession. Every man needs something of this sort, and the earlier in life one develops it the better his life will be,—broader, brighter, healthier, and more satisfying.

MISCELLANY

TENTATIVE PROGRAM OF THE SOUTH DAKOTA STATE MEDICAL ASSO- CIATION, MAY 19 AND 20

WEDNESDAY, MAY 19—Morning Session

Early Symptoms of Insanity - - -
- - - Dr. H. R. Hummer, Canton, S. D.
Discussion opened by Dr. G. S. Adams, Yank-
ton, S. D.

Paper by Miss Gertrude M. Rines, State Supervising
Nurse, Armour, S. D.
Discussion opened by Mrs. Wanzer, Armour,
S. D.

The Doctor and the State - - -
- Prof. Edwin V. Mitchell, Vermillion, S. D.
Discussion opened by Dr. F. A. Spafford, Flan-
dreau, S. D.

Standardization of Weights and Measures - -
- - - Dean Akeley, Vermillion, S. D.
Discussion general

WEDNESDAY, MAY 19—Afternoon Session

State Control of Water Supplies - - -
- - - Prof. H. A. Whittaker,
Minnesota State Board of Health, St. Paul, Minn.
Discussion opened by Dr. H. R. Kenaston,
Bonesteel, S. D.

The Surgery of Spinal Cord Tumors - - -
Dr. A. W. Adson, Mayo Clinic, Rochester, Minn.
Discussion opened by Dr. T. F. Riggs, Pierre,
S. D.

The Diagnostic Problem of Syphilis from the
Standpoint of Every-day Practice - - -
Dr. J. H. Stokes, Mayo Clinic, Rochester, Minn.
Discussion opened by Dr. Sherman Lull, Wau-
bay, S. D.

U. S. P. H. S. in Relation to Returned Soldiers -
- - - Dr. H. M. Bracken, St. Paul, Minn.
Discussion opened by Dr. J. F. Adams, Aber-
deen, S. D.

THURSDAY, MAY 20—Morning Session

Intravenous Medication - - -
- - - Dr. H. G. Harris, Wilmot, S. D.
Discussion opened by Dr. T. J. Billion, Sioux
Falls, S. D.

Fractures of the Femur, and Practical Demon-
stration of Use of the Hodgkin Swing - -
- - - Dr. F. E. Clough, Lead, S. D.
Discussion opened by Dr. M. M. Grove, Dell
Rapids, S. D.

The State Health Laboratory in Its Relation to
the Physician and Public Health - - -
- - - Dr. J. C. Ohlmacher, Vermillion, S. D.
Discussion opened by Dr. I. Pemberton P. Hol-
lingsworth, Sioux Falls, S. D.

Health Legislation - - - Dr. Park B. Jenkins,
State Board of Health, Waubay, S. D.
Discussion opened by Dr. H. T. Kenney,
Pierre, S. D.

THURSDAY, MAY 20—Afternoon Session

The Teeth in Congenital Syphilis - - -
- - - Dr. H. Gifford, Omaha, Neb.
Discussion opened by Dr. M. H. Ebert, Webster,
S. D.

Epidemic Polio-encephalitis - - -
- - - Dr. G. A. Stevens, Sioux Falls, S. D.
Discussion opened by Dr. J. A. Hohf, Yankton,
S. D.

X-Ray Diagnosis of the Pathological Thorax -
- - - Dr. N. J. Nessa, Sioux Falls, S. D.
Discussion opened by Dr. D. L. Rundlett, Sioux
Falls, S. D.

Fracture Dislocations of Head of Humerus
- - - Dr. G. G. Cottam, Sioux Falls, S. D.
Discussion opened by Dr. R. L. Murdy, Aber-
deen, S. D.

Tuberculosis - Dr. R. E. Woodworth, Custer, S. D.
Discussion opened by Dr. Fred Treon, Cham-
berlain, S. D.

CORRESPONDENCE

PSEUDO-RELIGIO-MEDICO-HYSTERIA— A REPLY FROM THE RECTOR OF ST. MARK'S EPISCOPAL CHURCH OF MINNEAPOLIS

THE JOURNAL-LANCET, at the request of the Rector of St. Mark's Church of Minneapolis, prints a reply to an editorial in the issue of April first regarding Mr. Hickson and his work. The reply does not in any way change the attitude or ideas of the editor, and, consequently, it is published without comment.—THE EDITOR.

TO THE EDITOR:

Holding as I do the most profound respect for the judgment of the medical profession of this city, a large number of this profession being among my most cherished and intimate friends, I am bound to regard with

more than common interest any expression that appears in their official paper, especially where it takes the form of an editorial. I note with unusual interest the article of April 1st, under the caption, "Pseudo-Religio-Medico-Hysteria," and I may say immediately that the heading is misleading and misinforming, for not only from my own, but the close observation of many others more competent than myself to observe and judge Mr. Hickson's recent mission, the one thing it lacked was the element of hysteria. This judgment, I may venture to say, was expressed by certain honored members of the medical profession who observed with peculiar interest this mission. I note that your editorial begins with a disclaimer of any personal feeling on the part of medical men, but the substance of the article is hardly in consonance with this statement, for it is not only an attack upon the whole philosophy and method of this mission, but it is a direct attack upon the Christian church that promoted it. It would hardly be becoming in me to enter into any controversial discussion of this matter, but as allusion has been made to my personal responsibility in bringing Mr. Hickson here, I feel justified in making a few very definite statements in answer to those contained in the editorial.

I note that you say, "No fair-minded medical man would criticize or deride the claim that prayer and religious influence are beneficial to the sick." This is fundamentally the position taken by Mr. Hickson. He grounds his whole claim, not upon any power inherent in himself, but upon the express teaching of Jesus Christ. Repeatedly in the course of his mission, he made this perfectly clear, and again and again, he admonished all those who came to him that they should follow with unflinching obedience the directions of their physicians. In this connection, may I venture to say that I have never heard from the lips of any man more splendid words of sincere praise for the greatness and efficiency of the medical profession than were uttered by Mr. Hickson. As one distinguished local physician said to me, "He lifts the profession to the highest levels of dignity and power that I have ever known."

So far as the use of this church for such a mission is concerned, I may venture to say that, in my humble opinion, it has never been put to a higher use, nor have those attending it at any time shown more profound reverence than the thousands who, through these three days, attended the mission. I observed the conduct of the mission with an open mind, and apart from anything that may have accrued to those who came, in the way of physical benefit, one thing was clearly obvious, namely, that in this mission they received an element of comfort and reassurance such as they had not known before, and even those who came to scoff remained to pray. With a total attendance of over 10,000 people, there was not one untoward incident, and in hundreds of letters and expressions given to me personally, there has been but one single word of praise and gratitude for what this mission effected. In this connection, I note that you refer to the fact that no records have been submitted through the press of cures. It ought to be unnecessary for me to remind you that Mr. Hickson and those associated with him in this mission, observed the same degree of courtesy towards those who came for comfort and healing that your honored profession itself exercises towards its patients. In this mission there was nothing of self-

exploitation, nothing of charlatanry, nothing of self-praise.

May I take up seriatim the four points that constitute the body of your editorial? First, that the mission was an attempt to offset and combat the methods of Christian Science. This is obviously untrue. I do not recall that Mr. Hickson alluded by name to Christian Science. As his position is wholly based upon the teachings of Christ, and as he stood unflinching for co-operation with the medical profession in the divine work of healing there was no reason why he should make allusion to Christian Science or any other cult. His method is not controversial.

Your second point is an affront to the whole church throughout this city, in which you state that the mission was designed to bolster up an attendance, the falling off of which "has been quite a problem for the clergy in the last two or three years." Speaking for my own church, I may venture to say to you that this has been quite unnecessary, and my observation has been that, during the past five years, the congregations here have steadily mounted, until they have tested at both services on Sunday the capacity of the building. It is hardly becoming a profession so closely related by every reasonable tie to the ministry of the church, to even imply that the church today is employing artificial means for the purpose of saving itself from loss of prestige and power. I can hardly believe that this editorial judgment reflects the mind of the vast majority of the men in the medical profession in this city.

Your third point is alike unworthy, that the mission had in it "an element of personal or dramatic desire to draw the people." I wish it might have been the privilege of every medical man in this city to have met Mr. Hickson, and I am confident that any dispassionate consideration of Mr. Hickson and his message would have won for him words of praise rather than words of unworthy and ungenerous criticism.

In answer to your fourth query, as to whether Mr. Hickson was brought here with a real religious or scientific object in view, I beg to say, as the one who invited him, that he was brought here solely in the interests of a religious object, and a religious object, may I remind you, that is as fundamental to the teaching of the New Testament as anything it contains. The Episcopal church is not over prone to take up faddish or extreme things. In fact, it is generally judged to be too conservative. But I speak the mind of the leading men of the church over the nation, a mind confirmed by the judgment of some of the greatest physicians in this country, when I say that Mr. Hickson's message to the Christian church is one of the sanest, soundest, most important messages that have been given in our generation. We are talking much today about the spiritual element in life, and we are attempting to make religion a vital and practical thing in the everyday concerns of the people. In a word, we are being admonished by the leading laymen of the nation that the primary things taught by Jesus of Nazareth must be restored, if the Christian church is to play its large part in this age of reconstruction. I rejoice to say that not a few of the distinguished men of the medical profession are among those who demand these things of the church.

How the healing mission shall be conducted as a distinct department of the church is a matter for further consideration, and whatever is done I apprehend

will be done with large sanity and I trust with the co-operation of those in the medical profession who believe that the spiritual element in healing is a matter of large concern and should be carefully conserved and recognized.

In conclusion, may I say that I believe I have some right to speak to the great medical profession, because of the unusual intimacy I have enjoyed through many years with hundreds of its distinguished sons. Where Mr. Hickson and those of us who followed him in his teachings desired to co-operate in every way with the medical profession, your editorial suggests an entire lack of desire or willingness on the part of the profession to have the Christian church in any wise disclose the spirit of co-operation and fellowship in the great ministry of healing.

I am, with great respect,

Very sincerely yours,

(Signed) JAMES E. FREEMAN.

St. Mark's Church in the City of Minneapolis,
April 7, 1920.

NEWS ITEMS

Dr. A. A. Passer has been elected mayor of Olivia.

Dr. F. G. Watson has moved from Rushmore to Worthington.

Dr. O. N. Begtrup has moved from Rugby, N. D., to Viroqua, Wis.

Dr. Wm. Guillaume has moved from St. John, N. D., to Stratford, S. D.

Dr. B. S. Bohling, of Sandstone, is doing postgraduate work in Chicago.

Dr. C. J. Holman, of Mankato, has been doing postgraduate work in Chicago.

Dr. J. E. McCoy, of Shell Lake, Wis., is doing postgraduate work in Chicago.

Dr. E. H. Morris, of Pittsburgh, Pa., has become associated with Dr. C. C. Leck, of Austin.

A Virginia (Minn.) physician has been tried six times on a charge of performing a criminal operation.

The North Dakota State Medical Association will hold its 1920 annual meeting at Minot on June 15 and 16.

Dr. George Moffatt, of Donnybrook, N. D., after doing postgraduate work in Chicago, has moved to Crosby, N. D.

Dr. Flora L. S. Aldrich, of Anoka, was made a presidential delegate at the recent Minnesota Democratic state convention.

Dr. W. A. Sansler, of Minneapolis, was elected a fellow of the American Proctologic Society at its annual meeting held in Memphis, Tenn., last month.

Dr. E. I. Wolf, who has been associated with Dr. C. C. Leck, of Austin, for several months, has moved to Shickshinny, Pa.

The firm of Drs. Hobson, Marshall, Owen & Holmes has succeeded the firm of Drs. Smith, Pease & Harrison, of Missoula, Mont.

Dr. O. H. Rystad has moved from Langdon, N. D., to Crookston, Minn., and will confine his practice to eye, ear, nose, and throat work.

Dr. Robert Guilmette, who has been doing locum tenens work at Bowden, N. D., for several weeks, during Dr. Clay's absence, has returned to Minneapolis.

Dr. Gustave A. Mathews, of Napoleon, N. D., died last month at the age of 53. Dr. Mathews took a course in medicine at Rush, and located in North Dakota in 1905.

Dr. Bion La Shier, of Armour, S. D., died last month in California. Dr. La Shier was a graduate of Rush, and was a pioneer physician in South Dakota, locating in Grandview in 1881.

Dr. Benjamin F. Mott, of Minneapolis, died last month at the age of 69. Dr. Mott was graduated from the Eclectic Medical College of Cincinnati in 1874. He practiced in Lake City for many years.

The South Dakota State Medical Association holds its annual meeting at Sioux Falls on May 19th and 20th, the business meetings being held on the 18th. The tentative program is published in another column.

Dr. R. N. Cranmer, of Minneapolis, who was in France nearly two years, has just received notice that he has been made an "Officer of the Academie," in the order of Universal Palms, in recognition of his services to France.

Dr. G. T. Haugen, of Battle Lake, has moved to Fergus Falls, and formed a partnership with Dr. T. N. Kettleison. Dr. Haugen will confine his work to eye, ear, nose, and throat practice. He has been doing postgraduate work in Chicago.

The Stearns-Benton County Medical Society held its annual meeting at St. Cloud last month, when the following officers were elected: President, Dr. W. L. Beebe; vice-president, Dr. H. W. Goehrs; secretary-treasurer, Dr. H. B. Clark; delegate, Dr. W. L. Beebe; alternate, Dr. C. B. Lewis.

Dr. H. Gideon Wells, of Rush Medical College, will deliver the annual address before the Alpha Omega Alpha Society at the Anatomy Building, University Campus, Minneapolis, at 8 p. m. on May 24. His subject will be "De-

iciency Diseases Observed on the Eastern War Front." The lecture will be illustrated by lantern slides, and will be open to all medical men and their friends.

Dr. Alfred Wharton, of St. Paul, died last month at the age of 84. He was the oldest physician in St. Paul, if not in the state. He graduated from the University of Pennsylvania, and came to St. Paul in 1857, where he practiced until 1885. He was a surgeon in the Civil War. Upon his return from war service, he entered into partnership in St. Paul with the late Dr. John H. Murphy, of St. Paul.

Eighty-eight physicians were granted licenses to practice in Minnesota by the State Board of Medical Examiners at the April examination; 62 of the number were recent graduates from the University of Minnesota Medical School. Dr. Thos. McDavitt, of St. Paul, was re-elected secretary; and Dr. A. M. Eastman and Dr. Ida A. MacKeen, of Minneapolis, were elected president and vice-president, respectively.

The Montana section of the American College of Surgeons was organized at Silver Bow, Mont., last month. Dr. Franklin H. Martin, the Secretary General of the College, was present at the organization. The members of the executive committee of the section are Dr. T. C. Witherspoon, of Butte; Dr. Le Roy Southmayd, of Great Falls; and Dr. Rudolph Horsky, of Helena. There are thirty members of the College in Montana.

DISTINGUISHED VISITORS COMING

A group of distinguished foreigners will visit Minneapolis this month. A European Commission is now being entertained by our National Board of Medical Examiners, and they will come to Minneapolis at the close of the A. M. A. meeting in New Orleans.

The Commission consists of Sir Humphrey Rolleston, of the Royal College of Physicians, and Colonel H. J. Waring, of the Royal College of Surgeons (representing the Conjoint Examining Board of England); Dr. Norman Walker, of Edinburgh (representing the Triple Qualification Board of Scotland); and Professor G. Roussy, physician, and Professor Desmarest, surgeon (representing the University of Paris). They will be joined in this country by Professor J. C. Connell, Kingston, Ontario, president of the Dominion Council, of Canada.

A number of distinguished American surgeons, physicians, and officials will join the group.

Dr. H. E. Robertson, of the University, is chairman of the committee on entertainment.

MINNEAPOLIS SANITARIUM FOR SALE

The prettiest and best-paying sanitarium in the Northwest is offered for sale for the best of reasons. Telephone Hyland 0152 or call at the Sanitarium, corner Plymouth and Penn Aves., Minneapolis.

LOCATION WANTED

Location wanted in town having hospital facilities by experienced man doing general practice and major surgery. Wish business running from \$8,444 up per year with good collections. Reasonable investment made. Address 336, care of this office.

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For part or whole time in hospital or office in Twin Cities. Can give highest of references. Address 339, care of this office.

POSITION AS OFFICE GIRL AND ANESTHETIST WANTED

By a young woman who is a graduate nurse and has had excellent experience with a high-grade surgeon in administering anesthetics. Can do typewriting, keep books, etc. Best of references. Address 342, care of this office.

INTERNES WANTED AT NORTHWESTERN HOSPITAL OF MINNEAPOLIS

The Northwestern is a general hospital with Departments of Surgery, Medicine, Gynecology, and Pediatrics, that offer a wonderful opportunity for study, with a staff consisting of many of the best-known physicians in Minneapolis. Address Superintendent, Northwestern Hospital, Minneapolis.

A \$16,000 GENERAL PRACTICE IN NORTH DAKOTA FOR SALE

In a modern town of 600 population, with no competition. Collections, 95 per cent. Large territory. The moderate sale price includes complete office equipment, automobile, rental contract, and thorough introduction. Possession given at once. For terms address 341, care of this office.

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Blakeslee dish washing machine, capacity 4,000 pieces per hour; 2-horse power motor; all in good condition. Will sell cheap. This machine will save its cost in a very short time. Easy to operate. Can be seen in operation at Eitel Hospital, 1375 Willow Street, Minneapolis, Minn. Telephone, Atlantic 0508.

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One of the New and Nonofficial Remedies. A valuable adjunct in the treatment of syphilis. Put up in syringes, each syringe containing 10 doses. Credit of 50c upon return of syringe. Pamphlet sent upon request.

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By careful cultivation, hand picking, and special processes for curing the leaves rapidly and removing dirt, stalks and foreign matter, 'Upsher Smith' brand Digitalis maintains the high standard of the war product.

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TINCTURE DIGITALIS (Upsher Smith) U. S. P. strength, contains 1 Hatcher unit in 10 minims (0.6 mil.). In 1 oz. bottles.
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PUBLISHER'S DEPARTMENT

MINNEAPOLIS CLINICAL LABORATORY

Dr. Henry Ulrich, who founded and still conducts the above Laboratory, is a pioneer in this line of work. He founded the first clinical laboratory in the Northwest, and has established a very high reputation for his diagnostic acumen and for his work with the autogenous vaccines made from the blood and discharges of the patient.

Dr. Ulrich's laboratory is now housed at the Eitel Hospital, of whose staff he is now an active member. He invites correspondence with the medical men of the Northwest.

TWIN CITY PHYSICIANS' EXCHANGE

Owing to the persistence of a woman who knew the value of an exchange for the use of physicians, Mrs. Christianson has put the Twin City Physicians' Exchange on a firm foundation, but she did so only after a struggle of several years.

The value of the Exchange cannot be told in a paragraph, nor always learned by experience in a month or so. This is true because its work extends in so many directions. The physicians who use it say it is often invaluable to them. Read what the Exchange will say to our readers in a series of talks, beginning on another page and be continued for some time in future issues.

RELIABLE DIAGNOSIS BY PHYSICIANS

Laboratory reports are of maximum value to the physician requesting them when they are both interpreted and all details worked out by a physician skilled in that particular branch.

All the x-ray and clinical laboratory technic of the Minneapolis Diagnostic Institute is carried out by physicians. Fluoroscopic and radiographic work, even the diagnostic dental films, receive the personal attention of Dr. I. J. Murphy; and routine, as well as special laboratory tests and protein sensitization work, is carried out by Dr. M. A. Shillington. Blood specimens for chemical analysis are run in duplicate and results checked by a second physician.

FELLOWS' SYRUP OF THE HYPOPHOSPHITES

Medical men made, by their perscriptions, Fellows' Syrup "The Standard Tonic for One-Half a Century," and it will probably remain so until tonics cease to tone up the system. The drug iconoclast may assert that all tonics are worthless, but the effect of such teaching seems to be almost nil. Somehow the human system at frequent intervals needs a boost, and if it cannot get such a lift in the form of rest, it must get it in the form of a tonic. For this reason Fellows' Syrup is used, and is used in such quantities upon the prescriptions of high-grade physicians that it may well be called "the Standard Tonic."

MELLIN'S FOOD

When a baby is deprived of its mother's milk before the weaning age, a hard problem is presented to the family and the physician; and it is not always solved readily by the best pediatrician.

Artificial food of some kind must be used. The one

that has stood the severest tests of the laboratory and the nursery is Mellin's, and it has done so because this company has co-operated with physicians and scientists in the development of a product that would stand the tests of expert observers, who know what a food should do for the baby to produce healthful growth.

Mellin's Food is also a high-grade food for invalids and convalescents, giving most gratifying results under all conditions of the alimentary tract.

"REAL BEER WITHOUT ALCOHOL"

The beer of the saloon was composed of alcohol and hops. The beer that nature brewed for the nursing mother, the invalid, and the convalescent is still made of hops, and has lost none of its appetizing and health-giving properties by having lost the "kick" of the saloon days.

The Purity Brewing Co., of Minneapolis, now makes a "Purity" Style Pilsener that is even superior to the old beer, and is far better for the invalid.

A bottle of it right off the ice will convince any doctor of the truth of our assertion.

MUDCURA SANITARIUM

The above-named sanitarium, established and conducted by Dr. H. P. Fischer at Shakopee, Minn., is now freely recommended to patients by their physicians, and the results obtained are uniformly good. Here one finds rest, gets sulphur-mud baths, massage, electrical treatments, and such general medication as the physicians of the Sanitarium recommend; and in the proper class of cases marked improvement or complete cure is not far from 100 per cent.

The Sanitarium is conducted like a modern hotel, and its location in the Minnesota Valley is very beautiful.

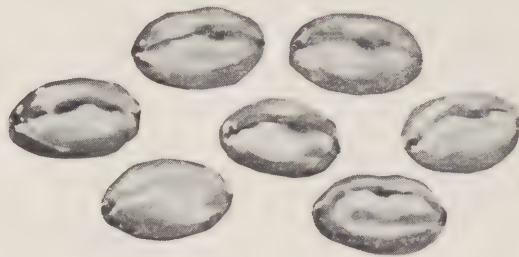
It is a good place for tired doctors, as well as for their patients.

ANASARCIN

In my cases that have recovered from the acute stage of influenza a number of physicians have reported a tendency to a weakened condition of the heart and of the circulation. Such a condition has often been of sufficient acuteness to demand special treatment, and in some ways it suggests the use of digitalis, but bearing in mind certain drawbacks connected with the use of this drug, a number of physicians have employed Anasarcin with very satisfactory results. Anasarcin slows the heart's action, increases the force of its contraction, does not contract the arterioles, and thus renders it possible to strengthen and regulate the heart without producing untoward effects.

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Anasarcin is supplied in the form of tablets which are rigidly standardized and which enable the careful physician to accurately adjust the dosage necessary in each individual case. Any physician who has not satisfied himself as to the efficiency of the product may do so by writing for samples and literature to the Anasarcin Chemical Company, Winchester, Tenn.



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The writer has been familiar with the development of the business of the above company for practically its whole life, or nearly forty years; and he has felt a real pride in this honorably and successfully conducted enterprise, whose business relations are exclusively with the unfortunate, not necessarily those in poor financial conditions, but those who have lost a limb, and are seeking relief from a terrible handicap.

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Success in the treatment of chronic constipation with cascara sagrada depends upon two things: first, the choice of a reliable preparation of the drug; second, its administration by a method that engages the patient's interest and co-operation.

The bitter fluid extract is frequently selected for its peculiar tonic effect upon the musculature of the colon. In that event the patient is instructed to drop the prescribed dose into an empty gelatin capsule, which is then closed and taken like a tablet or pill. The initial dose may be ten drops at bedtime, or, in more intract-

able cases, three times daily. The idea to be kept in mind is to push the dose until a natural daily evacuation is established, then to maintain it for a time until the tonic effect of the drug is manifest. At this point, and not until then, the dose may be decreased gradually to the vanishing point.

Parke, Davis & Co.'s bitter fluid extract of cascara sagrada is recognized as standard everywhere. It was the original preparation, first offered to the medical profession nearly half a century ago.

ASBURY HOSPITAL

A leaflet that will go into an ordinary business envelope lies before us, printed on one side only. The facts set forth tell the story, in both lights and shades, of a really great hospital—Asbury Hospital of Minneapolis; and yet who can tell the real story, the heart story, of such a hospital?

Speaking in round numbers, 6,000 patients were received by this hospital in 1919; and this is nearly 1,000 more than were treated in 1918; and among those patients the death-rate was only 2 per cent.

There were over 800 births in the hospital during the year, and, no doubt, the death and morbidity rates were far below such rates in the homes of the state.

The value of the property is nearly one-half million, and the current expenses for the year over \$200,000.

The free work done amounted to \$14,000, which is nearly 3 per cent of the value of the property.

The shade in the picture is a debt of a quarter of a million dollars, which is a brake on the wheels of this forward going institution of mercy.

Asbury is a great hospital, under the superintendency of a wise woman, with an able staff of physicians.

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Dependability characterizes the work done in this well equipped, modern laboratory. *Routine Laboratory Tests* receive equal attention with the more intricate laboratory procedures, such as *Basal Metabolism, Blood Chemistry* and *Wassermanns*, which are featured.

A special study is being made of the relationship of certain systemic conditions, to focal infections in the mouth. All work done by or under the personal supervision of Dr. A. C. Potter, formerly instructor of Pathology and Bacteriology, University of Minnesota, and Director of the Laboratories of the Minneapolis City Hospital.

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The various contagious diseases that have existed the past year should be sufficient warning to all householders to take special precaution to insure good health.

The constant daily use of a Reliable Disinfectant will prevent the spread of disease germs, and leave a clean, healthy atmosphere.

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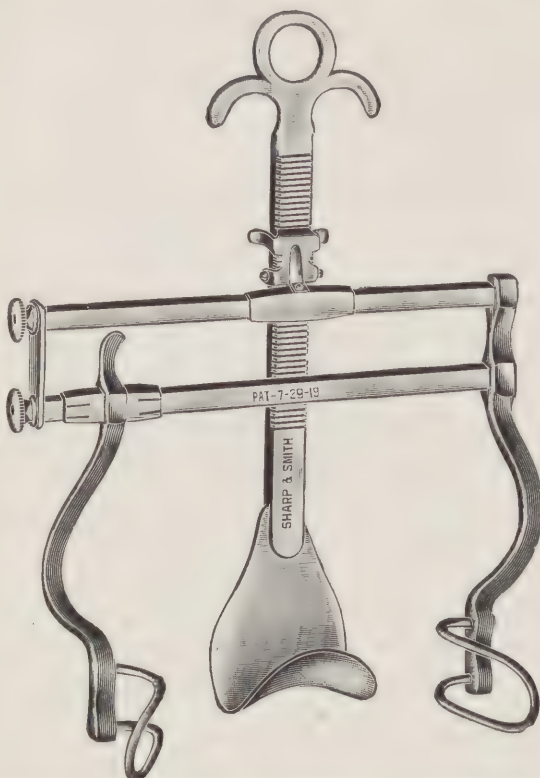
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BENIGN HYPERTROPHY OF THE PROSTATE*

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The advance which has been made in the successful management of patients with hypertrophy of the prostate is due, not only to the approximation of perfection in the operative procedures, but very largely to the pre-operative and post-operative treatment. The condition occurs, usually, in patients more than fifty, and many patients present themselves for the treatment of prostatic obstruction in their seventh decade.

It has been stated by various investigators that prostatic hypertrophy occurs in approximately 60 per cent of all men more than fifty; about 35 per cent of these require treatment. In this connection, Judd's⁹ findings are of interest. In an examination of 100 consecutive histories of men more than fifty, who were admitted to the Mayo Clinic with complaints other than genito-urinary, it was found that an enlargement of the prostatic had been palpable on rectal examination in every case. In 85 per cent the enlargement was slight or moderate; in the remaining 15 per cent it was marked. Although none of these patients came to the Clinic because of urinary symptoms, 58 per cent had symptoms of prostate enlargement.

Benign hypertrophy of the prostate has been attributed to many causes, among which are errors of alimentation, such as over-feeding, alcoholism, constipation, and hyperemic processes brought about by sexual excess. The appearance of the lesion in persons past middle life also has been explained on the ground that it is a normal

phenomenon of senility; that it is neoplastic; that it is due to the absence, in declining sexual life, of some internal secretion of the testes; and that it is the result of acute or chronic infection. It has been said, too, that the disease is analogous to the formation of fibroid tumors of the uterus, this hypothesis being based on the supposition that the prostate is the analogue of the uterus, which we know to be erroneous. It is quite probable that these various explanations of the cause of prostatic hypertrophy are, in most instances, without true foundation, and that, if any of the conditions named as etiologic prevail with prostatic hypertrophy, they probably can be dismissed readily as incidental or co-existing. Young states that prostatic hypertrophy is almost always the result of chronic inflammatory changes, and that nothing more definite than this is known.

The development and growth of the prostate is of great surgical significance. Lowsley¹² has shown that the gland develops from the portion of the urethra between the vesical neck and the ejaculatory ducts from five distinct sets of tubules or evaginations from the urethra, each set of tubules corresponding to one of the five lobes of the prostate; that is, middle, two lateral, posterior, and anterior. These evaginations from the urethra first appear at about the twelfth or thirteenth week of fetal life, and are separately grouped from the outset. The tubules of the anterior lobe reach their maximum development at about the twentieth week; they are decreased by half by the thirtieth week, and are nearly absent in

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the new-born. According to Lowsley's observations the middle lobe develops independently in nearly every instance; that is at variance with the observations of others who maintain that the middle lobe develops from the lateral lobes.

The rarity of hypertrophy of the anterior or ventral lobe may be explained on embryologic and pathologic correlation. Wilson and McGrath¹⁵ showed that the initial activity in benign hypertrophy is in the epithelium of the tubules. Because the change begins in the tubules it seems logical to assume that hypertrophy occurs most frequently in the lobes which possess the larger and more numerous tubules. In a fetus of sixteen weeks Lowsley found ten tubules in the middle lobe, forty-six in the lateral lobes, four in the posterior lobe, and fourteen in the anterior lobe. At birth the tubules of the anterior lobe had diminished to two small tubules. Possibly this explains the great rarity of hypertrophy in the anterior lobe, the infrequency of hypertrophy in the posterior lobe, and the frequency of hypertrophy in the middle and lateral lobes. The hypertrophy is not necessarily a diffuse hyperplasia of all portions of the gland, but may begin in separate areas. The initial change, as shown by Wilson and McGrath, is a hyperplasia of the parenchyma, which is marked microscopically by high cylindric epithelium with swollen nuclei, which resemble those in actively secreting epithelium, but which retain the secretion. The simultaneous muscular overgrowth is, apparently, an attempt to expel the retained secretion. As the spheroidal tumors or so-called adenomas increase in size, the peripheral portion of the prostate becomes condensed and forms a pseudocapsule from which the adenomas are removed in the enucleation operation of prostatectomy.

Beside the true adenomatous hypertrophy, which forms by far the largest percentage of prostatic enlargements, is the hypertrophy from chronic inflammation of the prostate, caused by chronic infection, which produces urinary obstruction. Enlargements of the prostate are benign in approximately 80 per cent of the cases; in the remaining 20 per cent carcinoma develops practically always in the posterior lobe, where benign hypertrophy almost never occurs.

The hypertrophy may be limited to one of the lateral lobes; and it may involve both lateral lobes, the middle lobe alone, or the middle and one or both lateral lobes. A surprising amount of hypertrophy may be present without symptoms; at other times slight or moderate enlarge-

ment produces severe symptoms. Because of the close proximity of the lateral lobes to the vesical outlet and their relation to the prostatic urethra, symptoms may occur with early and moderate enlargement. The enlargements of the median and lateral lobes extend along the line of least resistance; this is toward the bladder, since the triangular ligament forbids their descent. With enlargement of one or both lateral lobes the urethra and neck of the bladder are encroached on, and with more than moderate increase in size they extend intravesically, pushing the internal vesical sphincter outward and compressing the prostatic urethra. In cases of unilateral lateral lobe enlargement the intravesical portion may occupy a position immediately behind the internal urethral orifice and simulate median lobe enlargement, so that usually not until enucleation has been done can it be determined whether the enlargement is of the median or lateral lobe. If the lateral lobe enlargement is bilateral the prostate is increased in all diameters, and the intravesical tumor may become a large overhanging mass, compressing the urethra to a slit, and producing a mechanical obstacle at the elevated vesical outlet. The degree of enlargement does not bear a definite relationship to the amount of obstruction at the vesical outlet, as sometimes an only moderately enlarged gland produces acute retention. A very small lobe enlargement without lateral lobe hypertrophy may have a true ball-valve action productive of acute retention.

Mechanical obstruction at the neck of the bladder produces symptoms of back-pressure in the bladder and kidneys, chiefly because of increased residual urine due to the increase in the size of the prostate. With the advent of infection, the treatment of the condition is no longer local, but includes the effect of the prostatic enlargement on the entire urinary tract, and the general condition of the patient. Frequency and difficulty of urination are usually the initial symptoms in prostatic hypertrophy. Pain, particularly if associated with stone in the bladder, hemorrhage, and occasionally acute retention in some cases, may be initial symptoms. After an insidious course, in which residual urine increases, with infection and pyelonephritis, uremia may supervene.

DIAGNOSTIC SYMPTOMS

The diagnosis of urinary obstruction includes the consideration of benign hypertrophy, pros-

tatitis, cancer of the prostate, and spinal disease. Prostatitis usually follows an acute or subacute infection. Cancer of the prostate can be quite definitely determined by its almost constant appearance in the posterior lobe and extension to the trigone. Urinary obstruction, retention, or incontinence is often due to spinal cord lesion, but prostatic hypertrophy may be associated and may or may not be the cause of urinary symptoms. A decision as to the etiology of urinary symptoms, particularly incontinence, is extremely important from the standpoint of surgical results. Judd and Braasch¹⁰ have shown that incontinence is an unusual symptom in cases of uncomplicated prostatic enlargement, and occurs only when the enlargement keeps both the internal and external sphincters continuously relaxed. The so-called incontinence in prostatic hypertrophy is not a true incontinence, but the overflow of an already filled and distended bladder. In true incontinence, which is usually due to a lesion in the central nervous system and is most frequently found in *tabes dorsalis*, the bladder is always found empty, as the urine passes out as quickly as it enters. If an enlarged prostate co-exists with *tabes dorsalis* and produces symptoms that can be attributed to the gland, the question of operation is decided largely on the degree of obstruction, the stage of the spinal disease, and, more important, whether or not there is incontinence. If the incontinence is caused by spinal disease certainly nothing would be gained by removing the enlarged prostate. Judd and Braasch believe that, if the sphincter is not relaxed, if there is sufficient hypertrophy of the prostate to account for the urinary obstruction, and if the general condition of the patient is favorable, prostatectomy is justifiable.

CHOICE OF OPERATION

In the successful management of disease of the prostate the choice of operation, and whether or not operation should be performed and when, if it is to be performed, should be carefully considered. The basis for determining these points is the amount of local or primary change in the prostate and its secondary effects on the entire urinary tract, and the general condition of the patient. These points may be ascertained largely by means of a careful physical examination and the employment of a few laboratory tests. The specific gravity and microscopic findings in the urine are of importance. The degree of renal efficiency can be quite accurately estimated by phenolsulphonephthalein and the blood urea tests.

Because of the insidious onset of symptoms in the obstructing prostate much damage may be done before the patient seeks relief, and because of the changes, due largely to the effects of residual urine and its back-pressure to the kidneys with resultant infection and pyelonephritis, the average patient must be considered potentially uremic. The recognition of this condition and its preliminary treatment have been responsible for the decreased operative mortality as much as, if not more than, the improvement of surgical technic.

The amount of residual urine and the degree of infection determine very largely the preliminary management of patients with prostatic hypertrophy. Persistent residual urine is considered by many operators an indication for prostatectomy. From our experience with patients with obstructive prostatic hypertrophy, however, we believe that the percentage in whom immediate prostatectomy may be performed with safety is very small and includes, chiefly, those in whom the amount of residual urine does not exceed two or three ounces, and in whom the urinary tract is not infected.

Among the contra-indications to prostatectomy, are renal insufficiency, infection, lithiasis, atony of the bladder, and carcinoma (Braasch¹). Certainly, in all cases of residual urine of more than a few ounces, impairment of function of the kidneys results and progresses with increased prostatic obstruction, increased residual urine, and advent of infection with the development of pyelonephritis. The presence of purulent residual urine suggests cystitis, and if it persists a secondary pyelonephritis develops which influences the prognosis very greatly.

Vesical stone complicating obstructive prostatic hypertrophy occurred in 14 per cent of a series of 872 patients on whom prostatectomy was done in the Mayo Clinic. Frequently an apparent renal insufficiency is associated with stone in the bladder. It has generally been considered that the removal of a stone and of an enlarged prostate at one operation causes a higher mortality than the simple removal of the stone and drainage of the bladder for some time before the prostatectomy is done. However, a recent study by Latchem of the cases in the Mayo Clinic seems to indicate that there is practically no difference in the mortality-rate following the two procedures of management.

The determination of renal function influences the management of the patients very

materially. If there is much residual urine, particularly if infection and pyelonephritis are associated, the diminished phenolsulphonaphthalein output and urea retention are accurate criteria of the renal insufficiency.

Beside the information gained from the examination of the prostate by rectum the cystoscope is a distinct aid, not only in the determination of the amount of prostatic enlargement, but also in its effect on the bladder and kidneys, and in the diagnosis of associated lesions in the bladder. A routine cystoscopic examination is recommended by many surgeons. As Braasch¹ says, it is chiefly of value in cases of urinary obstruction with evidence of renal and vesical complications in which no demonstrable cause is found on rectal examination. If the nature of the prostatic enlargement is doubtful on digital examination, if the prostate is very large, if the amount of residual urine is great, or if the general condition of the patient is poor, cystoscopic examination is contra-indicated. Braasch has seen uremia and death occur from cystoscopic examination under such circumstances. In these cases information may be obtained by *x*-ray examination, particularly in the presence of vesical or prostatic lithiasis.

Residual urine is present in practically all cases of obstructive prostatic hypertrophy, varying from a few ounces to complete retention; and it is generally agreed that drainage of the bladder is necessary. The amount of residual urine and the degree of infection influence markedly the mortality-rate in primary prostatectomies. Certainly, the highest risk is the person with a large amount of clean residual urine. Choice of urethral or suprapubic drainage depends for example on the amount of residual urine, the degree of infection, the renal function, and the general condition of the patient. Drainage of the bladder is the keynote in the preliminary treatment, and opinion is divided on the advisability of urethral drainage in all cases, or suprapubic drainage and a two-stage operation for prostatectomy. There are advocates for urethral drainage in all cases and for suprapubic drainage in all cases. It has been our practice to prepare as many patients as possible by urethral drainage by intermittent or permanent catheterization; we use the suprapubic drainage or two-stage prostatectomy for patients who do not tolerate the urethral catheter or improve by its use, for those in whom all the urine is residual and who have symptoms of uremia, for those

with chronic retention, and for those with cystitis. During the past two years 24.4 per cent of the patients subjected to prostatectomy did not receive preliminary bladder drainage; 29.8 per cent had intermittent urethral catheterizations; 21 per cent, permanent drainage by catheter; and 24.7 per cent, suprapubic drainage.

A stage of depression follows drainage of the bladder by the urethra or suprapubically with lowering of the specific gravity of the urine and the subjective manifestation of loss of appetite, gastro-intestinal disturbances, and uremic symptoms of varying degree. In the cases with the greatest deficiency of renal function the condition may go on to true uremia and occasionally death, although usually it is but transient, lasting from a few days to two weeks. Several explanations to account for this condition have been offered. Judd⁹ believes that by relieving the obstruction the back-pressure is removed and a negative pressure in the pelvis of the kidney results which releases the blood vessels of the kidneys, and produces congestion and acute nephritis. After the period of depression there may be marked improvement in the general condition of the patient, manifested by return of appetite and recovery from the symptoms of renal insufficiency, as shown by increase in the phenolsulphonaphthalein output and decrease in the blood urea.

Drainage of the bladder and irrigations comprise the management in cases of benign prostatic hypertrophy if there are contra-indications to further operative measures, such as extreme old age, poor return of renal function, and coexisting local or general conditions, which of themselves contra-indicate any surgery. Such patients must always employ catheterization, which invites infection and eventually results in pyelonephritis.

The time when prostatectomy may be done successfully is determined by the condition of the patient, his general appearance, and the laboratory data. As a rule the preliminary treatment should be continued until the patient's general condition is much improved and the phenolsulphonaphthalein output and blood-urea determinations have approached normal. The greatest risk from prostatectomy after drainage of the bladder is in those patients who, because of long-standing pyelonephritis, improve slowly and continue to show renal insufficiency, although not sufficiently low to contra-indicate prostatectomy.

There are obstructive lesions of the prostate which are amenable to surgical treatment other than prostatectomy,—for example, the median bars and contractures at the neck of the bladder. Bottini's galvanocautery operation, introduced in 1876, was probably the first intra-urethral method of removing this type of obstruction. Fraudenberg's statistics show that it was used for a long time with fair results: 55 per cent of the patients were cured, and 30 per cent were improved; however, the mortality-rate of 7 per cent was too high for an apparently simple procedure. The results of other operators who have employed the method have been quite similar, so that, as methods of the surgical removal of prostatic enlargement were developed, the Bottini operation was replaced by the punch operation,¹⁷ which Young first performed in 1909. Since that time this operation has been generally used in selected cases.

Dittel, Belfield, and McGill were among the first surgeons to remove a prostatic obstruction suprapubically. They performed only partial prostatectomies, however, usually removing only the middle lobe. The first suprapubic prostatectomy was done in 1894, by Fuller; he was followed closely by Freyer. The development of the suprapubic and perineal operations for the removal of prostatic obstruction has been the outgrowth of simple bladder-drainage, which was instituted surgically, either by the perineal or suprapubic route years before the development of various operations for the removal of the prostate.

The evolution of perineal and suprapubic operations for the removal of the prostate was slow: at first only portions of the obstructing prostate gland were removed in the course of a drainage operation or the removal of vesical calculi. The first intentional perineal prostatectomy was done by Billroth, in 1867, who followed Küchler's method as it was worked out on the cadaver. Little progress was made until Goodfellow, in 1891, did perineal enucleation of the lateral lobe and removal of the median lobe. There have been various modifications of the perineal prostatectomy, with a few advocates of a combined transvesical and perineal operation. This has been abandoned, and today the perineal operation productive of the best functional results is the Young¹⁶ operation, first described by him in 1903, as opposed to the suprapubic operation developed and modified by Fuller, Freyer, Squire, Judd,^{8, 9} and others.

Deaver³ has properly stated that the merits of any operation must be judged first by its mortality-rate, and second by its results; that the mortality following prostatectomies performed by the general surgeons throughout the country is not under 20 per cent, but, when performed by the genito-urinary surgeons, it is under 6 per cent.² He also states that at about the time Freyer's mortality was down to 6 per cent, Page collected statistics from four London hospitals for the corresponding years and found a mortality of 21.5 per cent. No one factor has been so influential in decreasing operative mortality as the institution of pre-operative drainage of the bladder. This, in conjunction with greater accuracy in operative technic, has brought about an equally low mortality-rate for perineal and suprapubic operations for the removal of the prostate, particularly if the two-stage suprapubic operation is performed. The perineal operation in Young's hands carries a very low mortality-rate, a high percentage of good functional results, and a low percentage of complications. However, the perineal operation is generally accompanied by a fair percentage of poor results, due to injuries,—such as recto-urethral fistulas and incontinence, which practically never occur in the suprapubic operation. Incontinence is of comparatively frequent occurrence in the perineal operation and exceedingly rare following suprapubic prostatectomy in the absence of spinal disease.

Hyman, in a series of colloidal-silver injections of the bladder combined with röntgenography, showed that, in the normally distended bladder, the internal sphincter prevents the escape of urine from the bladder, and that, in cases of prostatic hypertrophy in which no operation is done, the internal sphincter is the seat of closure. The latter finding is at variance with the observation of others who have seen the bladder and prostatic urethra as one continuous cavity in prostatic hypertrophy with intravesical enlargement. This seems more plausible since in huge intravesical enlargements the internal sphincter muscle fibers are pushed laterally and the vesical neck is much dilated. However, Hyman's work, as well as that of others, has shown definitely that in the absence of the internal sphincter the external sphincter, or compressor urethræ muscle, exerts complete control. This is of importance, for the external sphincter in the membranous urethra can

readily be injured in the perineal operation, but practically never in the suprapubic operation.

In the suprapubic operation the median and lateral lobes of the prostate gland in which hypertrophy occurs are approached immediately, and the operation can be carried out very accurately under the eye. In the perineal operation the posterior lobe is approached; since in this lobe benign hypertrophy is rare and cancer usually primary, the perineal operation seems to be preferable in cases of early carcinoma of the prostate.

A distinct advantage of the suprapubic operation is the possibility of exploration of the interior of the bladder by sight, as well as by palpation. This is of particular value in the diagnosis of co-existing vesical lesions if cystoscopy is contra-indicated at the time of examination. Large stones are easily removed, and single or multiple diverticula, in the absence of contra-indications, can be dealt with through the suprapubic exposure. The matter of drainage may be dismissed by stating the apparent equal efficiency of dependent perineal and suprapubic methods.

The two-stage suprapubic operation has the distinct advantage of a low mortality-rate. Some surgeons never do a two-stage prostatectomy; others do it routinely. An intermediate course is taken in the Clinic; the one-stage operation is preferred, preliminary drainage having been instituted urethrally. The two-stage operation is reserved for patients in whom suprapubic drainage is indicated. It is in this group that the highest mortality occurs, not from the prostatectomy, but from the drainage, since suprapubic drainage is at times done as an emergency procedure in the presence of marked uremic symptoms, retention, and the poor condition of the patient; some of these patients never come to prostatectomy. Those who improve sufficiently to justify prostatectomy usually have an uneventful convalescence. By choosing the patients in whom suprapubic drainage is indicated, division of the operation into two stages carries a certain group of persons through, who probably could not survive the single-stage operation. On the other hand, to perform a two-stage operation routinely is extreme, and probably not productive of a lower mortality-rate than the employment of the one-stage operation in suitable cases and the two-stage operation in selected cases in which suprapubic drainage must be done.

Of the 352 prostatectomies performed in the Mayo Clinic during 1918 and 1919, 265 were one-stage operations; 169 of the patients were prepared on intermittent or permanent urethral catheterization. Eighty-seven patients (24.7 per cent) were subjected to the two-stage operation; a few less than one-fourth of these had suprapubic drainage because of the intolerance of the urethral catheter or their failure to improve on urethral drainage of the bladder.

The removal of the prostate suprapubically in the two-stage operation is technically more difficult than the primary or single-stage operation, chiefly because of difficulty of exposure due to the formation of scar-tissue following the preliminary drainage. When the suprapubic sinus has been excised, however, as good exposure may be obtained in many cases as with the single-stage operation, and the procedure carried out under the eye.

SUMMARY

1. Drainage of the bladder preliminary to prostatectomy by urethral catheter or suprapubic drainage is the keynote to successful management in cases of prostatic hypertrophy.
2. The two-stage prostatectomy may be limited to less than one-fourth of the cases of benign hypertrophy of the prostate.
3. The perineal and suprapubic operations carry an approximately equally low mortality; the advantages of the suprapubic operation are the direct approach to the portion of the prostate involved in benign hypertrophy, rarity of injuries resulting in fistulas and incontinence, accuracy of technic, and thorough exploration of the bladder.

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WORK IN AN EVACUATION HOSPITAL*

By E. H. MARCUM, M. D.

BEMIDJI, MINNESOTA

In taking for a subject upon which to address you today "Work in an Evacuation Hospital," I do so with the full appreciation that you have probably all been fed upon war work to satiety, but there are things of practical use to the civil practitioner which we saw in war work in large enough quantities to make them of value, while the ordinary civil practitioner would not see enough in a lifetime to be able to draw conclusions as to the value of a certain treatment or to deduce standard methods.

To begin with, the observations here made were gathered while working with Evacuation Hospital Number Eleven, located in the Argonne forest from the latter part of September to the middle of November, 1918.

During this time about 9,500 wounded men were cared for; therefore, as we had orders not to take anyone not seriously wounded, this paper will be of interest principally to the surgeon.

A word as to the method of receiving patients may be in place here.

The ambulances were unloaded in a large room where the wounds were examined and the patients placed in one of three classes: (1) those demanding immediate operation; (2) those too sick to stand immediate operation; (3) those who would not be injured by a wait of a few hours.

This division applied alike to American, ally, and enemy soldiers. We made this distinction, however, that enemy wounded in a particular class were left till our allied men of the class had been cared for.

From this sorting-room those demanding immediate operation were sent direct to the x-ray department for report, and from there to the operating-room.

Those too sick for operation were sent to what was known as the "shock-room."

For some time I had charge of one shift in the shock-room, through which we took 350 men with a loss of 52, and several of these passed out within a few minutes of entering, so that no treatment was given.

Something of the methods used here might be of interest in the treatment of surgical shock, whatever that may be.

We tried blood-transfusion by the citrate method in a number of cases, and came to the conclusion that where the condition of shock had existed several hours it was useless, but in case of recent hemorrhage it gave remarkable results. All our cases were classified as to hemolytic results.

There were two things that we could depend on in practically every case, and they were heat and elevation of the feet.

Bandaging of the extremities might have been of help in some cases, but in many instances one or all of the limbs had been injured, so that it was not practical.

Heat was applied by hot-water bottles, but our greatest aid was in placing the stretcher over two carpenter's horses the legs of which had been sealed up so as to make a sort of pen, and alcohol stoves were placed under them. I think this was our greatest help.

All the various hypodermic medicaments were used, but in the end camphorated oil became our mainstay.

Normal salt solution subcutaneously or intravenously would help for a short time, but was very transient, and, in the worst cases, gave very little results.

At the first of the Meuse-Argonne offensive there was a recommendation from the Surgeon General's office, amounting almost to an order, to use what was known as gum-salt solution in these cases. This was normal salt containing 6 per cent of gum arabic. We tried this for a short time, and then rebelled. The idea was

*Presented before the Upper Mississippi Valley Medical Society, at Bemidji, Minn., January 6, 1920.

that the gum would cause the normal salt to remain in the circulation longer, and in this way keep up the volume of the blood. I saw eight men, who I believe if they had been treated by heat and posture would have stood a fair chance of recovery, die in less than half an hour after the administration of the gum. They all died after severe vomiting, and most all in a marked chill. Anyone can imagine what would happen to a man in shock if given a substance that produced these two conditions. I talked with many shock-teams, and have yet to find one who had a good word for gum-salt.

We later found that the experimental work was done on dogs which were bled till in shock and then immediately given the gum-salt. This is quite a different thing from going hours with a very low blood-pressure.

I believe that the results of shock are in direct proportion to the time from injury to the beginning of treatment or more.

If the blood-pressure has been below eighty or ninety for more than three or four hours it makes very little difference what you do with that case. The man will die. There have been brain changes that you cannot overcome.

The average stay of a man in the shock ward was in the neighborhood of three hours, but some stayed as long as thirty-six hours, and then pulled out.

As to the treatment of wounds in general, there can be no doubt as to the value of débridement.

The skin edges around the wound were all trimmed off, and all damaged muscle removed. There are two signs as to the limit of damaged muscle: one is the color of the muscle, live muscle being red and glistening while the dead is brownish-red and the luster lost. Secondly, we removed muscle till we got the "muscle-jump" on being cut, or muscle reflex. At times a muscle group would be taken out in its entirety, but that was very much better than having it slough out in the end.

Our great object was also to leave the final wound funnel-shaped, with the point at the deepest spot in the wound or, in the case of through-and-through wounds, to leave a double cone. Loosened pieces of bone act as foreign bodies, and should be removed wherever practicable. Important nerves should be sutured in the wounds with chromic gut or covered by muscle, if possible. These nerves, in almost every case, would require subsequent suture to restore physiological

function, and this suture only made them stay in their anatomical position and not retract.

Dakin tubes were placed in almost every wound, and a few drams of solution injected with a glass syringe every two hours.

Abdominal wounds were never touched except to clean the external wound, if the case was over twenty-four hours old. If the case was received within this limit a laparotomy was performed in the usual way.

Simple through-and-through wounds in the limbs were left alone unless the case showed evidence of infection, except that the skin edges might be removed.

There was a general order to close all sucking wounds of the chest wherever possible. This was done in layers.

Very few foreign bodies were removed at the front.

Bullet wounds were seldom of the sucking nature, and, unless the rib was fractured, were generally left alone. In case the rib had been injured it was opened, and the fragments removed, followed by closing in layers as before so as to prevent air-contamination of the pleural cavity.

Hemorrhage was seldom considered at the evacuation hospital, as it had either stopped or the patient was beyond help.

In case of a large open wound the pleural cavity might be cleaned out as far as possible. The great mortality in chest wounds occurred in the first five days, so that whatever operating was done had to be carried out early, and the final result in most cases depended on the judgment of the man at the front.

As near as I could judge, 50 per cent of men with chest wounds died in the first week. Of those who lived long enough to reach the base hospital probably not over 5 per cent succumbed, and most of these died from pneumonia. Drainage of empyemas was in most cases successful. In cases of hemothorax or pneumothorax it was often possible to place the patient on the fluoroscopic table, aspirate the fluid or air, and watch the lung expand almost to normal in a few minutes.

Almost all brain cases called for craniotomy with the removal of foreign bodies and destroyed brain tissue by sucking out through a catheter.

There was seldom, at the front, any attempt made at plastic work on the skull.

One other class of cases is of great importance to the civil practitioner. I refer to joint injuries.

Contrary to the generally accepted idea that the synovial membrane is easily infected, I believe that the average army surgeon now feels that it resists infection very well for twenty-four to forty-eight hours, and that, while the skin, muscle, and torn edges of the synovial membrane may be infected, a thorough débridement of these tissues, in the great majority of instances, will render the wound sterile and that, if the joint is then closed in layers, a fairly good functional result is obtained.

Loose pieces of bone are generally removed, but in some instances where the wound gives good evidence of sterility these pieces may be removed, their edges curetted lightly to clean the same, and replaced in the joint. All joint surface possible should be left in place.

Drainage tubes should never be placed in a wound at this time. It means a stiff joint, and, in case of suppuration, can be put in later if needed. An open joint also becomes stiff, so that every effort must be made to close it.

Joints are the one place that will not tolerate a foreign body. Immediate mobilization will give

useful joints in the majority of cases. Resection is seldom called for unless the case is so extensive that the resection is practically already done. It should be a late operation when conservative work has failed.

Wax or foreign substances are seldom needed to fill in cavities in the articular surfaces, for these will gradually take care of themselves. If bleeding causes trouble pieces of muscle may be laid against the bone, and act as a very good hemostatic.

By following out lines of treatment similar to the above the death-rate had fallen from 27 to 28 per cent in 1915 to less than 1 per cent in 1918, and amputations from 30 per cent in 1915 to about 3 per cent in 1918.

In conclusion, I wish to say that the great points gained in this war were, first, that every wound was, potentially at least, infected; that every case should be given antitetanic serum at the earliest possible moment; and that the operation of débridement should be carried out, and the sooner the better.

FRACTURE OF PELVIS WITH RUPTURE OF BLADDER*

By JOHN H. RISHMILLER, M.D., F.A.C.S.

Chief Surgeon, Minneapolis, St. Paul & Sault Sainte Marie Railway Company

MINNEAPOLIS

In extensive fractures of the pelvis in women who are in the child-bearing period we have to be careful to get as perfect apposition of the bones as possible. This, of course, is not necessary in men or in women who have passed the menopause.

In some cases one is in danger of stirring up unlooked-for complications in trying to reduce the displaced fragments. If the patient has not a ruptured bladder the surgeon had better not produce one. If one has the bones in such position that they are not doing damage to the intrapelvic organs, one had better leave them alone. We never can get a complete reduction of fracture of the pelvis. Stereoscopic examination is very helpful and important. Pictures of fractured bones are for the purpose of showing us what is wrong rather than to indicate what the treatment shall be. If one has no trouble, leave the case alone; if one has trouble, then go ahead.

I have a unique case of fracture of the pelvis with rupture of bladder to report, that of a

woman, aged 47, whose uterus had been removed on account of fibroma. The case is as follows:

On September 19, 1918, at 5:30 P. M., while crossing the railroad track in a Ford automobile at Enderlin, N. D., she was struck by a switch engine. The patient arrived in Minneapolis on September 20th at 6:00 P. M., and was taken in an ambulance directly to the hospital.

Her husband stated that Dr. Labbitt had catheterized her, obtaining half a coffee-cupful of bloody urine. On questioning her I learned that she had not voided urine for three hours before the accident. Dr. Labbitt had catheterized her again the next morning, but obtained practically no urine.

The patient was in extreme pain through the pelvis on movement, and this raised a suspicion of a fracture of the pelvis, but she was in such a condition that an x-ray examination at this time was out of the question. The abdomen was markedly distended and tympanitic, bulging at both flanks. She had a running pulse of fair consistency. Her blood-pressure was as follows: systolic, 110; diastolic, 80; pulse pressure, 30.

*Presented before the Soo Surgical Association, December 8 and 9, 1919.

She was catheterized by a nurse, obtaining three ounces of what was practically blood. She and her husband were advised that immediate operation was necessary on account of rupture of the bladder. She was given a Noble enema, sponge bath, and vaginal douche of one-half per cent solution of lysol, and the regulation hypodermic at 7:45 P. M.

An operation was done at 8:30 P. M., on September 20th, under ether anesthesia, with the assistance of Dr. Hodge and House Surgeon Ward. A median incision, extending from the very edge of the symphysis pubis to within one inch of the umbilicus, was made. After going through the external fascia all the muscles were found urine-laden, and after going through muscles free urine escaped from the cellular tissue, and after going through the peritoneum bloody urine, amber in color, freely ran over the wound edges. The peritoneum was remarkably friable, and the abdominal cavity had been protected by fairly firm adhesive exudate over the intestines,—that is, the free abdominal cavity, so to speak, was not entered. A rupture in the forepart of the bladder where it is attached to the symphysis pubis, one and one-half inches in diameter, was easily brought into view. There was so extensive trauma with bloody extravasation and urinary infiltration that it was rather difficult to distinguish the different anatomic relations; therefore one surgical nurse was instructed to insert a sterile catheter through the urethra into the bladder, which was easily detected with the examining finger by the operator, leaving no doubt as to the hole in the bladder. The bladder had been entirely dissected away by the urinary accumulation from the symphysis pubis, and the pubic arch was plainly in evidence. The urine had also dissected downward on both sides of the bladder into the pelvis so that one felt that he could touch the ischial tuberosity with abdominal sponge holder on each side and it was remarkably surprising how much damage, by dissection, had been accomplished by the accumulated urine. The urine was all mopped out with large abdominal moist sponges. Blood-clots were removed from the bottom of the pelvis with small gauze sponges on long holders. A fracture was plainly felt by the operator and both assistants at the symphysis pubis, and the pelvic bones were plainly movable. The edges of the ruptured bladder were grasped with forceps, and then the musculature of the bladder wall was sutured with continuous suture of ten-day

chromic catgut. The outer layers were brought together with continuous suture of chromic catgut, using two layers of sutures, leaving no question that the bladder was closed in a watertight manner. Extensive drainage was decided upon and four long rubber tubes, one inch in diameter, were slit open and gauze placed in the lumen. Two of the drainage tubes were placed to the bottom of the pelvis on the right side and two on the left side, protruding through the lower abdominal wound. An attempt was made to suture the peritoneum, but on account of its friableness and tympanitic distension the sutures cut through. The abdominal wall was then sutured with a running ten-day chromic catgut blanket suture, including the peritoneum, muscles, and external fascia, with effective result. Next the external fascia was separately brought together with ten-day chromic catgut blanket suture. Three deeply placed tension-sutures of silkworm gut were inserted. The skin wound was closed with ten-day chromic catgut blanket suture, and finally the three tension-sutures were tied, thus giving a firm abdominal wound closure. Bulky dry-gauze dressing was applied and held in place with adhesive plaster.

Emmet's block-tin catheter was inserted for a continuous bladder drain, which worked very satisfactorily. At first the urine was bloody, and twelve hours later very little blood was detected.

On September 21st the patient was placed on a Bradford frame. A rectal tube was introduced at frequent intervals. She was given considerable water to drink, but no food. The abdominal dressings were completely changed on account of being saturated with bloody secretions showing free and liberal drainage.

The blood pressure was as follows: systolic, 118; diastolic, 82; pulse pressure, 36. The patient is in a very encouraging condition, and states that she feels better and more comfortable than before the operation.

On September 23d, she had a sinking spell at 9:00 A. M. The pulse went to 180. Camphorated oil, 1 c.c. hypo. Strychnine, gr. 1/20 hypo. 1 hour later. These were repeated as necessary. Was also given every night for about two weeks M.S. gr. 1/4 for pain.

September 25th: Removed two large rubber drains from abdominal wound.

September 27th: Removed two rubber abdominal drains.

September 30th: Radiographic examination (several plates), with block-tin catheter inserted,

showed as follows: There is a fracture of the right body of the os pubis, close to the acetabulum. There is a fracture of the right ramus of the ischium, a slight distance from the tuberosity of the ischium. There is a fracture of the left body of the os pubis, close to the acetabulum, with a large loose piece of bone on the inner side of the pelvis. There is a fracture of the left ramus of the ischium close to or almost through the tuberosity of the ischium. This makes four distinct fractures of the pelvic girdle; and the pubic part of the fracture is displaced downward and backward, as if the force which produced the fracture was applied over the symphysis pubis. The *x*-ray also showed about one-half dozen calcareous glands in the left side of the pelvis.

The block-tin catheter was discontinued during the day, but not during the night; and the patient was catheterized every three hours during the day.

Up to four days ago there has been free urinary discharge from the abdominal wound, but since that time no urinary secretions have been detected on the dressings. As the urinary viscus was severely traumatized another undetected opening must have existed in the bladder, or else the lacerated and urine-laden wound in the bladder did not heal by first intention.

Lacerated wounds do not heal as well as wounds with clean-cut edges, and surgeons have learned by experience that lacerated mucous membrane and serous surfaces are just as poor healers as skin and deep-tissue lacerations on the outside of the body. The healing of lacerated tissue is best promoted by making a clean-cut wound and then suturing the re-freshened edges. A surgeon who has taken care of prostatectomy cases and given considerable attention to the proper mode of drainage will be able to apply very successfully the same drainage technic in the treatment of ruptured bladder.

Efficient drainage is the whole secret in obtaining brief convalescence and excellent prognosis, and the rupture in the bladder would not necessarily require suturing.

October 18th: She can retain her urine for several hours, the bladder holding from three to six ounces.

October 23d: The block-tin catheter is entirely discontinued.

November 4th: Patient can hold as much as eight ounces of urine in bladder.

November 7th: All abdominal dressings were discontinued as wound had thoroughly healed.

November 15th: Patient sat in a chair at the bedside for first time.

November 20th: Radiographic examination, with several plates, showed liberal callus of the fractured pelvis; otherwise did not reveal anything different as described at the first *x*-ray examination.

November 23d: The patient states that she has no pain through the pelvis while walking about the hospital. For the past three days she has been able to retain as much as ten ounces of urine in the bladder. After voiding urine she has been catheterized on several occasions to determine whether or not residual urine could be obtained, but the bladder was always found completely empty.

Left hospital for home.

In conclusion I desire to direct attention to the fact that, as Elsberg states, "the control of the bladder is due to the tonic contraction of the vesical sphincter. If the bladder is distended, the sensory nerves are irritated, and stimuli are carried to the spinal centers and through the third and fourth anterior sacral roots to the bladder muscle. There is an antagonism between the sphincter and the detrusor of the bladder, and it is probable that stimulation of the sphincter is regularly associated with an inhibition of the detrusor, although both are controlled by centers in the brain and by volition." A ruptured bladder must be re-educated the same as in prostatectomy cases.

I have given this case in extenso; and the clinical memoranda speak for themselves as to the excellent result obtained.

PAIN: GENERAL DISCUSSION OF IT*

By D. B. RICE, M.D.

The Aberdeen Clinic

ABERDEEN, SOUTH DAKOTA

The fact that 90 per cent of all diseases either begin with or have pain as a prominent symptom at some time during their course, shows that a correct diagnosis can hardly be made without an intensive study and careful interpretation of the various forms of pain. Without even attempting to give one of the various definitions of pain which seem to be yet unsatisfactory, and, losing no time with the theories regarding the production of pain, the writer wishes in this brief synopsis to pass quickly to some phase of pain study, hoping that some statement may be made which will be both interesting and beneficial to the physician who is daily called upon to diagnose disease.

Probably the best general classification of pain is the one suggested by McKenzie, namely, subjective and objective.

Subjective pains are those which, so far as we can determine, have no organic cause for existence. Under subjective pains we may mention hysteria, emotional, occupation-neuroses, and habit pains. The hysterical condition is the one which interests us most. It is only recently that this condition has been recognized as an entity and as a disease worthy of the most painstaking attention and investigation. It is true that we have hysterical people; but is it not also true that we have too often made a diagnosis of hysteria when the term would only cover our ignorance of the real pathology, using it, we may say, as a "peg upon which to hang a diagnosis"?

That some change which accounts for the pain is present in hysteria cannot be doubted; and to assert that the pains of hysteria are all imaginary and have no basis, is a reflection upon the knowledge of physicians. How is it possible for a patient through the imagination to cause a paralysis of one vocal cord, when, perhaps, she does not even know that she has such a cord? Personally, I believe that it is due to some disturbance of brain metabolism, due to vasomotor changes. When we consider that the nervous system is of considerable volume and weighs about six pounds, and that it is subject to the same nutritional changes as are the other tissues of the body, it should be easy to conceive how

irritation and fatigue can make it subject to the vicissitudes of the other tissues.

In the diagnosis of hysterical pain, the writer, from limited experience, has considered limitations of the fields of vision and loss of the pharyngeal reflex as having considerable weight. Next, we may mention that the pain does not conform, as a rule, to any one organic disease, and that it is very contradictory in its character, time, appearance, and duration. The patient generally is very detailed in his description of the location, time of appearance, type, and intensity of the pain, while the sufferer from organic pain, on the contrary, makes but few remarks concerning his pain, and, when he does so, they are generally brief and to the point. Also, hysterical pains as a rule are not relieved by morphine.

Leaving off the less important kinds of subjective pain we shall discuss that which is always the result of some demonstrable pathological change, namely, objective pain. Objective pain may be said to be of two kinds, central and peripheral. According to the teachings of Head, the cortex of the brain as a place of origin for pain may be excluded. Pains in and about the head are due to peripheral irritation of the fifth nerve, which is widely distributed to the meninges covering the brain. However, lesions of the optic thalamus are very painful and intractable, as this part of the central nervous system is the chief sensory organ of the brain. Lesions about the cord, meningeal exudates, pressures, tabes, tumors—all give rise to pain, but such are, for the most part, due to action upon the peripheral sensory neuron, and, as a rule, do not give pain in the locality in which they are produced. Now, briefly mentioning peripheral objective pain, which is due to some irritative action upon the axis cylinder, the ganglia cells, or the receptors, I shall discuss briefly the cause of inflammatory pain. This has brought forth quite a few theories, but still I am of the same opinion as in 1909, when my co-worker, Dr. J. P. Wells, and I introduced the theory that it is caused by the propulsion of blood into the part without any means of return, the capillary paths being blocked and permitting but slight venous return from the inflamed area, or, that the return is so slow that the blood accumulates in the part.

*Presented before the Aberdeen District Medical Society of South Dakota at Aberdeen, April 18, 1920.

This principle of physics, in our opinion, accounts for the pain and conspicuous throbbing in acute inflammations.

Some authors mention a parenchymatous pain due to inflammation of the viscera. This seems to be more of a myth than an actuality, for it is a fact that no sensory nerves are distributed to the parenchymatous part of the viscera; therefore, no pain in the inflammation of the parenchyma of glands is possible. For instance, (1) kidney inflammation, especially the chronic variety, is entirely painless; (2) inflammatory disease of the liver is without pain, and the pain that is present in hepatitis is due to involvement of the capsule or to traction upon the abdominal wall by the pull of adhesions, the only exception being in syphilis of the liver; (3) lung tissue lacks pain sensation, and in such diseases as pneumonia the patient is unaware of the changes in the lungs until the pleura is involved; (4) the heart is also without local pain reaction, the pain due to myocardial diseases being referred to the anterior thoracic wall.

Next, last, and most important, let us discuss propagated pains, of which the associated and referred are the main divisions. The associated pain depends for its production upon the transference of stimuli from one nerve cell to another. In some cases it is impossible to tell by what means the stimuli are transferred, and I wish to mention the following cases in proof of this statement:

1. A pain in the top of the head occurred with rectal fissures. Upon the curing of the fissures the pain disappeared.

2. Pain in the anterior chest wall near the heart associated with labor pains.

3. Pain in the knee associated with putrescent pulp of the lower second bicuspid. Upon drawing the tooth the pain was relieved. Upon sealing it again after it had been opened and drained, the pain returned. This experiment was made several times.

If the original cause of the pain is very severe and is continued long enough, adjacent centers become irritated, owing to the central stimulation by the overlapping or spilling of stimuli from the adjoining centers to which the stimulus is conveyed. This is typified in the ear pain which follows toothache, or pain in the infra-maxillary branch of the fifth nerve when the stimulus is in the superior maxillary branch. In some cases the pain becomes very diffuse, and this may be accounted for by the crossing of

fibers passing from one side of the cord to the other, and by the diffusion of stimuli. Again, we may mention that these diffusely distributed pains are very liable to be mistaken for hysteria. In some cases the diffusion is so great and the pain so general that they are spoken of as generalized pains.

Other instances of associated pains are as follows:

1. Mrs. H., aged 44, married late in life and never was pregnant. Her health has been fairly good. Several years ago she had an acute exacerbation of a chronic otitis media in the right ear. For some time she had suffered from severe pain in the right ear, only during the menstrual period. Dr. Torrey, of New York, was called to see her, but before reaching her house the pain had ceased. Bimanual examination later, at this doctor's office, showed an enlarged and tender left ovary, pressure upon which caused quite severe pain in the ear.

2. Pain in the chest, right side anterior, from pressure on back of right forearm.

3. Pain in chest on right side over second right costal cartilage during each dressing of an appendiceal abscess wound.

4. Stimulation of a mole on the leg produced pain in the chin.

5. Alger reports a case of severe abdominal pain resembling that due to appendicitis, caused by eye-strain. Upon adjustment of glasses the pain disappeared. Three years later when the glasses were lost, the pain returned.

By referred pain is meant that which is caused by irritation along the course of the nerve fibers and the pain is felt as being produced at the end or the peripheral distribution of the affected nerve or nerves. There are three places where irritation may cause referred pain, namely: (a) the cord, (b) the posterior roots or ganglia, and (c) the nerve trunks.

Among referred pains due to cord irritation are the well-known girdle pains of *tabes dorsalis*, transverse myelitis, and cord tumors. Referred pains from lesions on posterior roots may be due to tumors, inflammation, as meningitis and herpes, fragment of a fractured vertebra, etc. The principal causes of referred pain, however, are lesions occurring somewhere on the nerve trunk or one of the branches. When a lesion occurs on the trunk, the pain is always referred to a point on the periphery distal to the irritation; but, if the lesion is on the branch, the pain may be referred to an area proximal to the

irritation. This is due to its reference along a collateral branch. Cases in proof would be pain in the groin from above caused by prolapse of the ovary, stone in the bladder, and movable kidney; from below, osteoma of tibia, flat-foot, and popliteal sarcoma.

Dr. Bennett reports a case of pain in the knee caused by a corn. In this case a loose semilunar cartilage had been diagnosed, and an operation considered. These pains were found to be present only when the patient wore shoes.

Cases of downward reference are as follows:

1. Pain in the arm and hand from pressure on the brachial plexus from a supernumerary rib.

2. Pain in the little finger from pressure on ulnar nerve fibers due to a growth on the first rib.

3. Pain in the chest in the distribution of the fourth and fifth dorsal nerves from aneurism of the aorta.

4. Pain in the legs due to tumor of the cauda equina.

5. I remember one patient who had a pain in the great toe due to stone in the bladder. This is explained by the fact that there is a common origin from the first sacral nerves of the nerves supplying the dorsum of the great toe and those supplying the prostate and mucous membrane of the neck of the bladder. Iodine and other local applications had been applied to the toe until it had become infected and was incised.

In conclusion, I wish to say that the desired end-result of this paper is to influence physicians not to pass judgment upon patients with a diagnosis of hysteria, neuralgia, or "nervousness" until all possibilities have been weighed in the balance. Many times, before leaving the general field, I have told patients that, not having at hand up-to-date laboratory methods, my

diagnosis may be wrong. These patients, after returning from the clinical laboratory with a correct diagnosis, retained confidence in my advice and work.

Of all the equations which go to make up the physician's work the patient must be the central figure. And, realizing what confronts the physician in diagnosis, in problem recognition, in fact accumulation, in creative imagination, in reasoning power, and in philosophic grasp, what Farady said of the philosopher is applicable to the diagnostician: "He should be willing to listen to every suggestion, but determined to judge for himself. He should not be biased by appearances; have no favorite hypothesis; be of no school; and in doctrine have no master; and truth should be his primary object."

MISCELLANY

A SANITARY EXPERIMENT IN PHILADELPHIA

In 1913 the Henry Phipps Institute leased a small group of houses, of a type generally regarded as the worst in the city. The Institute improved the property from the point of view of sanitation and outward appearances. The tenants were all foreign born; and a nurse was put in charge of educational work among them. The experiment was continued for three years, at the end of which time the Institute gave up supervision of the property and returned its management to the tenants. Landis, who communicates the details of this work and who illustrates his paper with several pictures of the property at various times, voices his surprise that in general the tenants have maintained the improved conditions to a much greater degree than was anticipated, since the houses passed out of the control of the Institute. Whatever lapses have occurred have manifested themselves largely in the absence of the esthetic effect rather than in a reversion to faulty hygiene.—Landis, H. R. M.: An Experiment in Sanitary Education. *American Review of Tuberculosis*, March, 1920.

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THE MEETING OF THE AMERICAN MEDICAL ASSOCIATION

The American Medical Association held its seventy-fifth annual meeting in New Orleans on April 26-30. Other societies allied to the Association, but not directly associated with it, began several days before, and concluded their meetings before the A. M. A. meeting was opened.

The total registration amounted to about 3,650. Of this number 2,142 were from the Southern states, leaving only 1,500 registering from the North and the West. The registrations from Minnesota for the four days numbered 75, and of these 27 were from Minneapolis, 14 from St. Paul, 15 from Rochester, and 4 from Duluth. North Dakota had a total of 9 registrations, South Dakota had a total of 6, and Montana registered 3. Very naturally, New Orleans would receive a large number of registrants from the adjoining Southern states. Those registering from Louisiana numbered 716 for the four days. Registrations for the adjoining Southern states were as follows: Alabama, 181; Arkansas, 94; Mississippi, 254; and Texas, 371.

New Orleans was hardly prepared for this meeting, and really did not want it, but it was the other cities of the South that forced New Orleans to extend the invitation. The medical men of New Orleans would have been very much pleased if the meeting had been delayed five years, and for various reasons.

But, in spite of this, New Orleans gave a very warm reception to the medical men. As the hotel accommodations were not sufficient, many of the visitors were housed in private homes and boarding-houses out of the down-town district. Some were very comfortably situated, but others were not.

New Orleans is a very quaint and interesting city to visit, and it affords many sidelights for its guests. Within five blocks of the St. Charles Hotel is the Negro Quarter with its open sewers, which are hardly considered modern at the present time. The old French and Spanish Quarters are still intact, and they are very interesting from many points of view, and there one may buy antiques of almost any description. In the old business portion of New Orleans the streets are very badly paved, making locomotion rather hard. The outlying districts have better streets and more car-lines to accommodate the population.

The greatest and most interesting feature of New Orleans is the shipping district, which includes the Mississippi river, its tributaries, and its outlets, and Lake Pontchartrain. There must be an enormous amount of shipping going on in New Orleans, and to those who are interested in that sort of work it is wonderful to see the ships from various countries of the world.

The medical men in the medical schools had a series of clinics arranged for the visiting members. Here one saw eye, ear, nose, and throat work; surgery under Dr. Matas and others; and internal medicine in its various forms at the various hospitals and clinics.

The writer does not know whether it is wise to comment on these clinics, but they were reported on by various men from various viewpoints, and were said to contrast strongly with the clinics of the East and North. Evidently New Orleans is a little slow, medically, and perhaps that is the reason the objectors wanted the meeting postponed. It did one thing, however: it drew a large number of Southern men together, and gave them their first experience, perhaps, in attending an American Medical Association meeting.

One must not forget the scientific exhibit in the Jonathan Hutchinson Memorial Building, of Tulane University. Here everything pertaining to the medical and surgical man was in evidence, from instruments of the smallest kind used in connection with a surgical outfit,—all kinds of apparatus, all sorts of chemical products, and everything in the way of x-ray exhibits, pictures,

charts, and demonstrations of all kinds. The building itself was not large enough to accommodate its exhibits, and some were obliged to exhibit in tents on the grounds.

One rather curious thing that attracted a good deal of attention was the chicken of Dr. Lespinasse, of Chicago. This chicken was a very vivid demonstration of what can be done in the transplantation of glands, something which the surgeon has carried on for a number of years, producing remarkable results. In this particular bird the ovaries were removed while it was quite young, and they were supplanted by the testicles of a rooster. As a result the chicken grew into a rooster,—that is, it had tail feathers and a brilliant cockscomb, and strutted around in a most arrogant manner. Of course, the great idea in this transplantation is to carry it on to a higher degree, and, ultimately, it is expected that the transplantation of glands may be produced in the human race. In fact, the good doctor had an illustration of a man who had atrophic testicles, which were replaced by the healthy testicles of a man who was injured so severely that death resulted, but whose testicles were successfully transplanted to the other man, who improved wonderfully and renewed his youth.

New Orleans is noted for its French restaurants, not only in the city but in the French Quarter, and the medical men were rather inclined to test them out to see whether they appreciated the old-fashioned French cooking or not. Many of them proclaimed their enjoyment, and others said they preferred what they are most accustomed to. However, there was one place which was very popular, and which was visited by a large number of the visitors. Five of us were sitting around a table at luncheon one noon during a violent rain-storm, and again one of us called the manager over to the table and said: "We men are from the North, and is it possible for us to get a drink?" He leaned over, and in a stage whisper announced that it was; that if we would walk down Canal Street five blocks we would come to the Mississippi River! This shows that New Orleans is not entirely dry,—that is, the Mississippi still supplies fluid for Louisianans, but from a prohibition point of view New Orleans seems to be pretty tight. The only relaxation one can indulge in is a bottle of "near beer," which has a beautiful old-time label on it, is manufactured, apparently, by all the old-time manufacturers, and evidently contains, from the odor, hops, and, from the taste, malt; but somehow it has no

authority. As the humorist from the *Washington Star* observed, the man who called it near-beer was a poor judge of distance. After experimenting with this type of drink, I think one may safely say it is just as good as anything else, perhaps better for the body politic, even if it has no kick in it.

Some of the men who read papers in the various Sections were obliged to use a lantern, and it was with the greatest difficulty, and only by the persistent effort of the Chairman, that a lantern could be secured and operated. In some instances it was not operated even, because the hall was unsuited and the lantern was not manned. A measure was introduced by Dr. Christian, of Boston, to the effect that hereafter the men in charge of the arrangements for the American Medical Association meetings be authorized to send an advance man to the place of meeting for the purpose of seeing that everything is in readiness for the readers of papers.

The House of Delegates did a lot of work. In the first place, they put their firm and unanimous disapproval on compulsory health insurance, notwithstanding some men from England talked of its advantages. The House of Delegates also went on record in reporting that all drug addicts should be treated at institutions and should not be cared for by physicians in private practice or in private sanatoria or their own homes. This measure will be very much more effective than the loose Harrison Law, which has done almost nothing to prevent the use of narcotics. The Delegates also performed a good service for the Association by electing Dr. Hubert Work, of Pueblo, Colorado, for its next president. Dr. Work has been a very active speaker of the House of Delegates for a number of years, and is trained in the management of these unruly bodies; and he is popular because of his firm hand and his rapid decisions when it is necessary to make rulings. Then, too, it is the first time that a neuropsychiatrist has been elected president of the American Medical Association, and, notwithstanding the objections of some men to the election of Dr. Work, he will probably make one of the best of presiding officers and managers.

One old-time custom which should be immediately abolished is the long-drawn-out, tedious inaugural address of the incoming president. Is there anything more disheartening, more discouraging, and of less value than one of these monstrous, long-winded speeches to a mixed

audience who are unable to follow an uninteresting man in an uninteresting address for a period of from one and a half to two hours? Everyone is bored, most everyone is sleepy, and all raise their hands in thanksgiving when the address is over. Those who are present will never read it, and those who are not present will have heard so much about it that they will not care for it. It is to be hoped that Dr. Hubert Work, when he delivers his inaugural address, will be concise and to the point, as he always is.

The Carnival Ball given for the incoming president was a glorious carnival affair, and was patronized by the society people of New Orleans, and, not so extensively, by the visiting men and their wives, mainly because they could not gain entrance. But, then, if the New Orleans people had a good time, why should we complain who did not go?

The next meeting will probably be held in Boston, and, although it is far away for a Western man to attend, Boston is looked upon as the hub of medicine, and the attendance will probably be large.

A VISIT FROM DISTINGUISHED FOREIGNERS

The University of Minnesota Medical School received a visit on Wednesday, May 5, from a commission of foreign guests who were invited to this country by the National Medical Examining Board for the purpose of inspecting medical schools in the United States with the idea in mind of bringing about more closely reciprocal relations between the graduates in medicine of the allied nations.

The commission consists of Sir Humphrey D. Rolleston, F.R.C.P., London; Col. H. J. Waring, F.R.C.S., London; Dr. Norman Walker, Edinburgh; Dr. Gustav Roussy, Professor of Medicine and Neurology, University of Paris; Dr. E. E. Desmarest, Professor of Surgery, University of Paris. They were accompanied by Dr. David A. Strickler, Denver, Colo., president of the Federation of State Boards of Medical Examiners, and Dr. Walter L. Bierring, chairman of the National Board of Medical Examiners.

The commission appeared to be strongly impressed with the advanced methods in medical education in this country and were particularly enthusiastic in regard to graduate medical education as carried out in the University of Minnesota Medical School. Their time was limited to an

inspection of the Medical School and an informal conference with members of the teaching staff.

Their itinerary in this country includes the Mayo Clinic, Rochester, Minn.; University of Chicago; University of Cincinnati; Western Reserve University; and medical schools of Boston, New York, and Philadelphia. The commission will leave this country about the middle of June.

OUIJA BOARDS AND SPIRITISM AS A RELAXATION

Apparently some of the people have gone crazy on ouija-board reading. It is noted in the daily press that in Oakland six or seven people were arrested and committed to hospitals for the insane for their determined attention to the ouija board. They confessed that they went without food and sleep for twenty-four continuous hours, and they got exactly what they deserved,—quiet, rest, baths, and change of scenery in a hospital for lunatics.

It is rather strange what crazes people will take up to occupy time that might be more profitably employed, but anything that savors of mysticism, that causes indulgence of mental speculation, and a weakening of the intellect, seems to be the dominating factor at the present time. Perhaps this might be classed as another substitute for prohibition. Of all the senseless, inane occupations or amusements, the ouija board certainly brings out an unsurpassed type of mental defectives. And yet some of these poor ungeared minds think that they are accomplishing a great purpose, not realizing that their mental faculties drift only in certain narrow chasms; and eventually they get so deep into the canyon of mystery and tomfoolery that, like the people in the mountains, they are lost because they dared too much.

Allied to these are the people who are dipping into spiritism. Outside of the few who are trying to study this subject from a scientific point of view, most of them are witless, narrow in mind, and woebegone in appearance, emphasizing again and anew the number of classic degenerates that inhabit this mundane sphere. But one must not expect too much when it is reported that only 10 to 20 per cent of the people think for themselves. And these people who think that they are thinking, and at the same time dabble in spiritism and ouija-board exercises, are simply the scum of mental life. Of course, many are lured into these mental gymnastics by the fact that a few men from abroad have come out in favor of spirit-

ism. To these we recommend the writings of Rupert Hughes, who, in a most vigorous and convincing manner, has set forth the follies and dangers to these men and women who waste their time and deplete their minds. There is no substitute for these things among a type of people, except, as they become wearied in mind, weak in body, and starved in soul, some other fool enterprise breaks to the surface and they rush to it as if possessed of but one desire, the gratification of their uncontrolled senses.

More people are gradually being engulfed in this dangerous practice. Before they realize it they have gotten in so deep that they are unable to think their way out, and they lose control of their faculties and conduct and become simple inanimate blanks. There ought to be a course of instruction given by someone who is capable of thinking things out from a scientific point of view that would interest this class of doubtful minds, and they should be impressed with the necessity of right living, right thinking, and better reading. Of course, one does get tired, mentally and physically, and the path of least resistance is that which offers something that is uncommon and supposedly relaxing. The mad world is going on for a time over-indulging itself and expressing its lack of initiative and its loss of power. Already our hospitals for the insane and the sanatoria are crowded with people who are physically and mentally sick, the outcome of either influenza or war conditions; and to still further crowd the hospitals with people who might have been saved if they had had any ideas to cling to, is really an appalling situation.

WAVES OF CRIME

Syndicated articles appearing in the press throughout the country have entertained their readers by attempts to depict the "master criminal," and they have shown, perhaps faithfully, at least in exaggerated form, the enormous number of crimes that are committed daily all over the country. It is recognized now that this gang, wherever they are and whoever they are, can very readily drive a truck or a series of trucks up to the back door of a large wholesale house and with a gun or a battery of guns depopulate the whole establishment. They seem to know beforehand what goods are most valuable, and these are appropriated, carried away, distributed, and resold—all under the protection of some leader who seems to be extremely clever.

The publication of these articles will doubtless

do much good in time, but at present it seems to have encouraged a number of smaller gangs of bandits and thieves to carry on this nefarious work without fear of injury or imprisonment. Occasionally some thief is run down and occasionally someone is sent to the penitentiary; doubtless more will get there as our police methods improve, but the majority of these gangs escape with their booty.

It is amusing to note that in these so-called desperate operations a lot of liquor stored has been loaded on trucks and carried away. Houses have been invaded, stores have been depleted, particularly the stores of former saloonkeepers, and one questions as to whether these robberies are not conspiracies on the part of several. This particular gang feel that this stored liquor should not be stored forever, and they are doing all they can to help the thirsty wayfaring man. It must be rather ticklish business to distribute and dispose of \$10,000.00 worth of bottled goods, but somehow it is done.

The result of all this burglary and disposition of stolen goods has prompted others to indulge in various sorts of crime, and they are the ones who invade households, rob people on the street, and go about holding up small shops, depleting cash-register boxes, and occasionally firing a shot. It has been found that among those who were arrested and convicted of burglary of this kind, are many young fellows, perhaps just starting on this promising career of crime. Some of them, we are sorry to say, are returned soldiers, but that is to be expected. Some of the men who went into the army were probably hardened criminals beforehand and thought that enlistment would change their attitude toward life; but they have come back with a stronger element of crime, which prompts them to operate for their own selfish advancement. They are absolutely indifferent to the fear and terror that they create, and, in a measure, they seem to enjoy this method of robbery. It seems likely that most of these men are defectives or degenerates of some type. It is certain that the tremendous wave of crime now spreading over the country has developed in the minds of men below par, whose mental attitude has changed, and who think they are brilliant when they succeed in robbing a shop-girl or a man on the street, or in carrying off goods for loot. A success in such hazards may make the man keen in his endeavors and cool in his methods; yet it simply strengthens the fact that he must be morally deficient, constitutionally

inferior, and has a decided lack of uniform development and growth in his cerebral cells. No amount of effort on the part of officials seems to be effective, due, in all probability, to the lack of a sufficient number of officers. Then, too, people are rather careless about displaying their possessions,—their furs, money, and jewelry. One does not necessarily feel very sorry for someone who makes an inordinate display of wealth when someone comes and takes it away from him, but it often happens that people are robbed who can ill afford to lose even a few dollars, but that is nothing in the mind of the bandit.

Ultimately this crime wave will be checked. Many of the men who think themselves fitted for thievery will blunder, and then their true character will come to the surface. Fortunately, the courts will look upon them as criminals, and they will be placed under proper restrictions, and our jails and penitentiaries will be filled to overflowing with unbalanced and undeveloped men and women,—yet it seems to be the only solution and the only measure which will discourage the criminal, whether petty or great.

THE "SWAN SONG OF THE JOURNAL"

"Suspended publication probably for three months—perhaps indefinitely—is the ultimatum—which this issue of the Health Journal is forced to face and from which to ask the immediate assistance of our readers."

The above quotations are the opening paragraph and the caption of an editorial in *The Minnesota Public Health Journal* of April 22. It is of interest mainly because it shows how indifferent the public is to writings on health topics—unless they appear in a newspaper and tell how to cure all diseases from itch to consumption, which the *Association Journal* did not undertake to do.

The free circulation of the *Journal* was 13,500 copies; the paid circulation was 114 copies. As the publication of the *Journal* involves an annual expenditure of over \$16,500, as explained in the editorial, its publication should not be resumed without the best of evidence that it is justified by unmistakable results. We do not believe such results can be determined; nor do we believe a paid circulation—a bona fide list of subscribers—can be obtained to the number of 1,000 names.

We are speaking from long experience with technical journals, and raise the point only to show the difficulties that beset publishers of tech-

nical and professional papers—difficulties now greatly increased by the almost triple cost of every item that enters into the expense account. It perhaps would not be an unmixed evil if many special journals went to the wall, provided the reduction in number meant an increase, or even a possible increase, in the value of the survivors.

Our prediction is that the *Journal of the Minnesota Public Health Association* cannot survive.

A TWO-FOLD COUNTY AND ITS MUTUAL AID SOCIETY

Up in her northeastern corner, Minnesota has a county that pokes its nose so far towards the east that the map-makers always cut this nose off and put it at the top of the map to be adjusted by the reader or searcher after geographical facts pertaining to that part of the state.

Well, this two-fold county has been trying an experiment which may be of interest to a good many other places where doctors do not seem to want to go. "The Cook County Mutual Aid Association" is the name of the experiment, and its purpose is to make it possible to get a physician when you want him, and make sure he does not starve to death between wants. The Association is a purely citizens' affair, organized for their self-preservation, and without the aid of a medical promoter. It is incorporated, and has a board of directors who do not draw even "one dollar" for their annual service.

The membership fee is \$10, which pays for medical service for all members of a family except children over 16 years of age, who are presumed able to pay their own fees.

In addition to the membership fees, the medicines prescribed must be paid for, and when the physician has transportation expenses they must be paid by the patient. In confinement cases an extra fee of \$10 is charged.

This admirable plan obtained for Cook County a physician during the past year, when, without it, none would have been obtainable. Dr. Wilfred McKechnie, formerly of Red Lake, is the present community physician, who will remain at least another year.

Why should not other communities without physicians work along these lines, and invite good men to keep the people in health, and restore them when out of health? Many more calls for physicians come to this office than can be found to answer them. Some of the locations promise

incomes that would have been acceptable to most young men a few years ago, but are not at all tempting today. Such communities must either go without physicians or agree as communities to support them.

CORRESPONDENCE

QUESTIONS AS TO SHAVING OR WEARING A BEARD—INFORMATION WANTED

TO THE EDITOR:

In my medical course I reinember hearing a European specialist say in regard to shaving: "Gentlemen, if you interfere with nature, you pay for it." But I am unable to find any scientific investigation of the question. I am seeking, therefore, facts and opinions from physicians. Will you kindly answer, *as soon as possible*, the questions below? I may refer to you by name, but only with your permission (kindly let me know).

1. To what extent are the beard and moustache a protection to the face, nose and throat from the incidence of disease in these organs?
2. Does the habit of shaving increase the chances of neuralgic and other troubles of the face?
3. Or, do you believe the question of shaving, or wearing a beard, from the medical point of view, is not of sufficient importance to merit serious study?

Trusting you will write as fully as you can, and mention any pertinent facts or opinions not covered by the questions, I am,

Very sincerely,

ARTHUR MACDONALD.

The Congressional,
100 East Capitol Street,
Washington, D. C. April 23, 1920.

FELLOWS AND SCHOLARS IN THE MAYO FOUNDATION—A CORRECTION

TO THE EDITOR:

My attention has been called to an item in the March 1st number of THE JOURNAL-LANCET under "Correspondence" on page 139, in which you say: "The number of 'scholars' and 'fellows' now (in the Mayo Foundation) is about 40. The 'fellows' are teaching assistants, entered for a full three-year course leading to a degree."

I presume "40" is a misprint. It should have been 140, as you can readily see by adding the number of "fellows" and "scholars" given in the list in a subsequent paragraph. None of the "fellows" are teaching assistants; some of them are clinical assistants.

The enclosed statement gives a list of the students in the Mayo Foundation April 1, 1920.

I will be pleased to have you correct the error, since it has been quoted in other journals, and I have received several letters concerning it.

Very truly yours,
LOUIS B. WILSON, M. D., Director.
Rochester, Minn., April 27.

MEDICAL GRADUATE STUDENTS IN THE MAYO FOUNDATION (UNIVERSITY OF MINNESOTA), APRIL 1, 1920, WHO ARE EACH REGISTERED FOR PERIODS OF STUDY OF THREE OR MORE YEARS.

FIELD OF MAJOR	FELLOWS	SCHOLARS
	Candidates for advanced degrees	Not candidates for advanced degrees
Chemistry	1	..
Bacteriology	1	..
Pathology	2	..
Roentgenology	1	1
Internal Medicine	20	1
Dermatology	2	1
Surgery	86	10
Orthopedics	1	2
Urology	5	1
Ophthalmology	4	..
Oto-laryngology and Rhinol-ogy	7	1
Dental Surgery.....	..	4
	130	21

In addition to the above there are also in the Foundation five medical graduate students registered for short periods of three to six months each. These are officers from the United States Navy and traveling Fellows from other (foreign) universities.

The University of Minnesota has thirty-seven more graduate students in the Medical School in Minneapolis, who are not included in the above list.

"THE NURSING SITUATION"—A REPLY

TO THE EDITOR:

The graduated nurses have noted with somewhat more than passing interest your editorial in THE JOURNAL-LANCET for April 1 concerning the nursing situation. Perhaps because they are so closely in touch with affairs they do not concede that their raise in prices is due to satiating a desire for luxuries, but that it is merely an attempt to keep abreast of prices which (very oddly) affect them as well as most other people in these days; therefore they did advance their fees to thirty-five and forty dollars a week. This is, however, for a one hundred thirty-three hour week.

Do you know that people of any financial range whatever do not count the nurse's fee as being any more exorbitant than their medicine, hospital, or doctor bills? In fact, they often seem to consider this money as well, or a little better, disposed of than any other part of the expense. A part of the new rules, too, if you remember, was that a nurse should use judgment in lessening either her hours or her charges.

Dr. Sneve's paper to which you referred had, doubtlessly, many good points, but remedying the evil of which you spoke, and which we as nurses do not even admit to exist, was not one of them.

If you give girls one year of intensive training, in the face of registered nurses, you would have another class which would be only equivalent to the experienced practical nurse of the present. Above all, do you really think you could control their demands for salary? This talk about nurses seems, as far as we can follow it, to be occasioned by the appearance before the public of "practical nurses" with little or no experience or training, who try to care for the sick at rates of any place from eighteen to forty-five dollars a week. Of course this must be stopped, but meanwhile we don't care to be classed with these people any more than you of the medical profession wish to be confused with "quack" doctors.

As for the more intelligent classes, can you imagine them wanting a nurse who didn't know whether Agamemnon is a new bug or the latest cereal addition from Battle Creek, or handling one of your own nervous cases, for instance?

You mention the "flu" epidemic to further your point. Is there really any forceful objection to the response of nurses during the great need for them this spring? They had to nurse whole households at a time, and do the cooking and any general housework, too,—a couple of occupations they have never signed up for, and there was no noticeable scramble for five hours a day, either.

We are grateful, however, that you have nothing much against the Visiting Nurses. It leaves us a little encouragement for this nursing revolution you are basing your hopes on.

"The contrast between the demand of nurses for increased fees, and time off, and that of the busy doctor who works for more hours than he should, is a guide-post which may clear up the situation in time."

Ye Gods! That a doctor works is true, a thousand times true, we admit; but, listen, if a patient had as much opposition getting her nurse out of bed at night as she would getting a doctor, she would die of exhaustion, if not of her original ailment in the interval.

Nurses aren't any bunch of tin angels, but you can't tell them that there are many doctors optimistic about being called at night or much more than five per cent of them remarkably civil. And this for only a telephone call. As far as making night calls, isn't it really only the young doctors, nine chances out of ten, that go? Most of the others send their assistants. And, too, it seems to me that looking forward to anything from five to fifty dollars—they tell me some doctors have charged that for a Lake call—we might be philosophical, too. Think of it—and then hold a post-mortem over thirty-five dollars for one hundred thirty-three hours of it.

No, please don't try to make us believe that point. If doctors were as loyal to nurses as nurses are to doctors, then, indeed, would the situation be cleared.

If nursing is so doomed to downfall, why do you think any girl should care to respond to the call for pupil nurses, to put in three years of her time for the privilege of being "panned" whenever some medical Jupiter steals a minute from his rushed semiprofessional semigolf existence, and takes his pen in hand for the purpose of knocking off a little credit due her? No, it won't lead to the possibility of nurses being weeded out, I'm afraid. There won't be anyone to weed out, and in that case some of our doctors will have a chance to stick around, and be really tickled at

getting up at one-hour intervals and weighing the baby before and after, and feeding him up to the proper tenth of an ounce, and if he isn't up enough doing that, maybe some superhuman will order nutritive enemas or a change of dressing about "q. hr."?

This is an exaggerated dream, but at least a sincere one. Not to the doctors who "serve," but the ones who throw stones through other people's isinglass windows.

Respectfully,

MINNIE M. MORRISON.

Minneapolis, May 6, 1920.

REPORTS OF SOCIETIES

MINNESOTA ACADEMY OF MEDICINE

The stated meeting for March was held the 10th, with twenty-five members in attendance. Dr. C. W. More, Eveleth, was elected an associate member; and Drs. Harry B. Zimmerman and John C. Brown, of St. Paul, were elected active members.

REPORT OF CASES

Dr. R. E. Farr reported a case of pyelonephrosis, with removal of kidney, operated on under novocain in a man who suffered for twelve years with attacks of pain in the left groin. General examination discovered nothing adventitious. A few pus cells were found in the urine; blood pressure, 128-90; temperature, 100°. X-ray, blank for stone. Cystoscopy: bladder contained much flocculent material, and a small ulcer near the left ureter. The right ureter was catheterized without difficulty; normal urine. The left ureter, obstructed; urine mixed with blood and pus. Pyelogram showed a shadow in the region of the kidney. At operation five ounces of a 0.5 per cent novocain were used. Transverse incision. The kidney was exposed and a large amount of pus evacuated. Kidney removed. An anomalous artery was present and apparently was the cause of the trouble.

A second case, of nodular tumor of the stomach, reported by Dr. Farr was in a man 52 years of age who complained of pain in the upper abdomen; worse shortly after eating. No emesis. The kind of food taken made little difference. There was a general loss of strength and an increasing anemia. Blood pressure, low. Hemoglobin, 50. The x-ray showed a large tumor of the greater curvature of the stomach. The mass could also be palpated. Operated on under novocain—crucial infiltration of upper abdomen, combined with blocking of sixth to tenth thoracic nerves, left side. Recti divided. Vertical incision in midline to ensiform. Skin dissected back, exposing the ribs, four of which were divided in the axillary line and at their costosternal angle. Only slight glandular involvement. Duodenum divided and inverted. Stomach united by two rows of chromic gut to the jejunum, twenty inches below its origin. The removed tumor was about the size of a large grape fruit. Patient getting well.

Dr. Farr also reported another case of kidney and ureteral complication. The patient, a man, had had one kidney removed five years before, for stone. Two years ago a suprapubic cystostomy was performed for a large stone in the bladder. He remained well until last month. Examined at this time, the x-ray gave a large

shadow about the left kidney. Cystoscopy showed a perfectly functioning right kidney. From the left ureter there oozed a worm-like stream of pus, especially upon making external pressure. The catheter could be introduced for only a short distance into the canal. Operation was done under novocain. The kidney was exposed and opened. A moderate amount of pus and urine came away. The kidney was enucleated from its fibrous capsule, and the vessels divided. The ureter was divided, and freed for about six inches. Through a low McBurney incision (extraperitoneal) the ureter was freed to a point distal to the stone, where it was ligated and severed. Wound drained.

Dr. Colvin exhibited a renal calculus the size of a normal kidney which had been removed along with the kidney. The patient, 35 years of age, had had no symptoms of stone, except frequency of urination, since the age of 15.

Dr. Geo. Douglas Head reported a case of acute miliary tuberculosis associated with marked cyanosis and severe attacks of dyspnea, ending in death.

We are all acquainted with the usual forms of miliary tuberculosis. The type beginning slowly and insidiously like typhoid fever is recognized by all writers. Meningeal form, so well described by Gerhard, of Philadelphia, is usually diagnosed, provided care is taken in the study of the case, and time enough elapses after the onset to secure the necessary findings and develop the clinical picture. The pulmonary form ought to be the easiest to recognize, but, curiously enough, it is not. This is especially true if röntgenograms or fluoroscopic examinations of the chest are not made. One usually finds the patient with the signs of bronchitis, fever, and cough coming on acutely. A striking feature, and one which should arouse suspicion, is the blue lips, fingertips, and suffused cheeks, without cardiac disease. Dyspnea and the signs of diffuse bronchitis, with hyperresonance over both chests, may confuse the picture. While some dyspnea usually is present, Dr. Head says he never before had seen the disease so intensely asthmatic. Breathing was so difficult that morphine had to be given to control the paroxysms.

A CASE

Walter G., aged 22, married, was admitted to Base Hospital, Camp Wheeler, Macon, Ga., on December 17, 1919, complaining of cough, fever, and a macular eruption over the face and shoulders. Family history, negative. He had had mumps and typhoid fever in 1908, and lues in 1911. He was well until four days before admission, when he began to cough. An erythematous eruption appeared on his body; he developed fever, and had to stop drill. On admission to the hospital a diagnosis of measles with acute bronchitis was made. The note of December 18th reads as follows: "Temperature 101.8°; pulse, 76; respirations, 16. Physical examination reveals impaired percussion note in the left lower base behind, with harsh breath-sounds. Numerous sibilant and fine crackling râles, centered more in the left lower base behind, can be heard." The diagnosis of bronchopneumonia complicating measles was considered probable.

On December 21st, four days after admission, the patient began to develop considerable cyanosis over the face and body. The lobes of the ears, the cheeks, and finger-nails became blue. The patient complained of difficult breathing and a feeling of oppression over

the chest. Examination of the lungs at this time showed a hyperresonant node over both lungs, and suppressed breath-sounds over the right base. Increased whispered voice sounds could be heard in the right base, but no tubular breathing and no increased bronchophony. Temperature, 103.4°; pulse, 104; respirations, 36. The leucocyte count was 6,000; p. m. n., 80 per cent; s. mono., 7 per cent; l. mono., 13 per cent. Urine, negative. Sputum showed type IV pneumococcus, also non-hemolytic streptococcus. The diagnosis of measles with acute bronchopneumonia seemed established.

During the 23rd, 24th, and 25th of December, the patient's condition remained much the same, except that the cyanosis became more marked and the hyperresonance over both lungs more pronounced. On two or three occasions the patient had such severe attacks of dyspnea that he was obliged to be propped up in bed with pillows and hypodermics of morphine given. On the 25th the rash had entirely disappeared, but the cyanosis and dyspnea were still very marked. On the 26th the chest findings showed a bilateral hyperresonance with ill defined fine crackling râles over both lungs anteriorly and posteriorly; no increased bronchophony; no tubular breathing; no distinct area of dullness. Blood examination: leucocytes, 8,000; reds, 4,200,000; hemoglobin, 85 per cent; p. m. n., 75 per cent; s. mono., 11 per cent; l. mono., 12 per cent; trans., 1 per cent; eosinophiles, none. Sputum showed no Charcot-Leyden crystals, no Curschmann spirals, but large numbers of eosinophiles. Sputum was not examined for tubercle bacilli.

The patient died suddenly in an attack of dyspnea on the 28th, eleven days after admission to the hospital. The final attack came on suddenly, death occurring before any measures could be taken for his relief. The necropsy, made twelve hours after death, showed all organs normal except the lungs. These showed diffuse bilateral miliary tuberculosis. From apex to base, the lungs were filled with fine miliary tubercles, with no caseation and no cavity formation. Pathological diagnosis was acute miliary tuberculosis of the lungs.

Dr. J. G. Cross read a paper on "Factors in the Prognosis of Chronic Nephritis"; and Dr. C. C. Chatterton read his inaugural thesis, the subject of which was "An Ambulatory Method of Treatment of Old Un-united Inoperable Intracapsular Fractures of the Femur." Following their presentation, both papers were fully discussed by those present.

F. E. LEAVITT, M. D.,
Secretary.

NEWS ITEMS

Dr. Sigfred Engh has moved from Ostrander to Cottonwood.

Dr. J. D. Brooks, of Sturgis, S. D., has moved to Oakland, Calif.

Dr. C. N. Brooks has moved from Wallace, S. D., to Clark, S. D.

Dr. D. McBane, of Rainy River, Ontario, who was well known in Northern Minnesota, died last month.

Dr. J. W. Batterton has moved from Elk Point, S. D., to Colton, S. D.

Dr. D. W. Matthali has moved from Carrrington, N. D., to Fessenden, N. D.

Dr. H. C. Parsons, of Watertown, S. D., is doing post-graduate work in New York City.

Bethesda Hospital of St. Paul will build a new hospital building at a cost of several hundred thousand dollars.

Dr. E. E. Lowe, of Chicago, has become associated with Dr. G. H. Twining in hospital work at Mobridge, S. D.

Dr. T. E. Jones, of Sioux Falls, S. D., recently discharged from army service, has located at Valley Springs, S. D.

Dr. L. E. Doolittle has been re-elected school physician of Duluth at a salary of \$3,500 for nine and a half months' work.

The visit to Minnesota by a commission of distinguished foreign physicians is commented upon in our editorial columns.

Dr. H. Martens, who has been doing post-graduate work in New York, will be associated with the Dodd Clinic in Ashland, Wis.

Dr. Frank Gunn, formerly of Eau Claire, Wis., who has been doing Government work in Minnesota for some time, has located in Baudette.

Dr. J. Y. Batterton, of Colton, S. D., is in charge of Dr. W. C. Moodie's practice in Elk Point during the latter's absence in the East.

Miss Corintha Blachly was elected, some time ago, superintendent of the Northwestern Hospital of Minneapolis. She is a graduate of this hospital.

Dr. F. P. Rasmusson, after practicing in Center, N. D., for five years, has become a chiropractic and gone to Dayton, Ohio, to practice.

Dr. Henry E. Holmes, a retired physician of Minneapolis, died on May 2. Dr. Holmes came to Minneapolis in 1882, and practiced until about ten years ago.

The South Dakota State Medical Association meets in Sioux Falls next week (May 19 and 20). We regret that their program failed to reach us for publication.

Dr. Pierre A. Hilbert, Melrose, has been appointed by Gov. J. A. A. Burnquist a member of the Minnesota Board of Control. Dr. Hilbert has occupied a number of positions of trust in Minnesota.

The address of Dr. Gideon Wells, of the University of Chicago, to be given next week (Monday evening, May 24), before the Alpha Omega Alpha society, will be well worth hearing.

Dr. John Steinbach, of Winona, died on April 28 at the age of 65. Dr. Steinbach has practiced in Winona nearly thirty years, most of the time as a specialist in eye, ear, nose, and throat work.

Malta, Montana, will endeavor to build a new hospital, the present building being wholly inadequate. In order to conduct a training school under the state law the capacity of the hospital must be fifty beds.

Dr. L. F. Sutton, field inspector of the Minnesota Sanatorium Commission, has gone to Europe to study social conditions in England. He will visit English hospital and sanatoria to study their conditions and methods.

We attempted to say in our last issue that Dr. W. A. Fansler, of Minneapolis, was made a fellow of the American Proctologic Society at its annual meeting in Memphis last month. The type called him Dr. Sansler.

Drs. W. G. Crandall and C. J. Ehrenberg, on the staff of the Minneapolis General Hospital, have resigned to enter private practice. Dr. Crandall will remain in Minneapolis, and Dr. Ehrenberg will go to Willmar.

Dr. Luther A. Harris, of Wadena, died last month at the age of 42. He was a graduate of the University of Minnesota Medical School, class of '91, and had practiced a short time in Dalton before going to Wadena.

Dr. Charles E. Smith, Jr., secretary of the Minnesota State Board of Health, will not attend the forthcoming meeting of the International Health Congress in Belgium although he is an American delegate to the Congress.

The annual meeting of the American Roentgen Ray Society will be held in Minneapolis on Sept. 15-17. Drs. F. S. Bissell, of Minneapolis, and A. B. Moore, of Rochester, are on the committee of arrangements. The leading x-ray experts of the country will be present.

Dr. W. J. Marcle, of Minneapolis, was elected a director of the National Tuberculosis Association at its annual meeting in New Orleans last month. Mr. Otto F. Bradley, of the Hennepin County Tuberculosis Association, was made a member of the important committee of Christmas Seals; and Drs. H. W. Hill and F. W. Wittich, of Minneapolis, read papers.

Dr. H. J. Rowe, of Lisbon, N. D., the secretary of the North Dakota State Medical Association, who has been seriously ill with pneumonia, is reported much better. Dr. Rowe has been the secretary of the State Association many years and has served two terms in the state senate. He was the author of the first prohibition law introduced in the legislature of the state.

HIGH-GRADE X-RAY TECHNICIAN WANTED

A firm of physicians and surgeons in Montana will give permanent employment at good wages to a high-grade x-ray technician. Address 345, care of this office.

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Location wanted in town having hospital facilities by experienced man doing general practice and major surgery. Wish business running from \$8,444 up per year with good collections. Reasonable investment made. Address 336, care of this office.

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For part or whole time in hospital or office in Twin Cities. Can give highest of references. Address 339, care of this office.

POSITION AS OFFICE GIRL AND ANESTHETIST WANTED

By a young woman who is a graduate nurse and has had excellent experience with a high-grade surgeon in administering anesthetics. Can do typewriting, keep books, etc. Best of references. Address 342, care of this office.

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The Northwestern is a general hospital with Departments of Surgery, Medicine, Gynecology, and Pediatrics, that offer a wonderful opportunity for study, with a staff consisting of many of the best-known physicians in Minneapolis. Address Superintendent, Northwestern Hospital, Minneapolis.

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The literature of the institution can be had by addressing Waukesha Moor (Mud) Bath Co., Waukesha, Wis.

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As we have before said in these columns, the Eitel Hospital of Minneapolis is an institution of which the citizens of Minneapolis are proud, and abundant evidence of this fact is shown by its almost crowded condition at all times—its manifest prosperity.

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The hospital is maintained by a Protestant church organization for humanity, making no distinctions as to the religious beliefs of the patients. Furthermore, it has long been so conducted as to gain the entire confidence of the medical profession, and its name appears in the brief list of hospitals in the Northwest which, it was recently reported, are held to be *standardized* hospitals by the American College of Surgeons.

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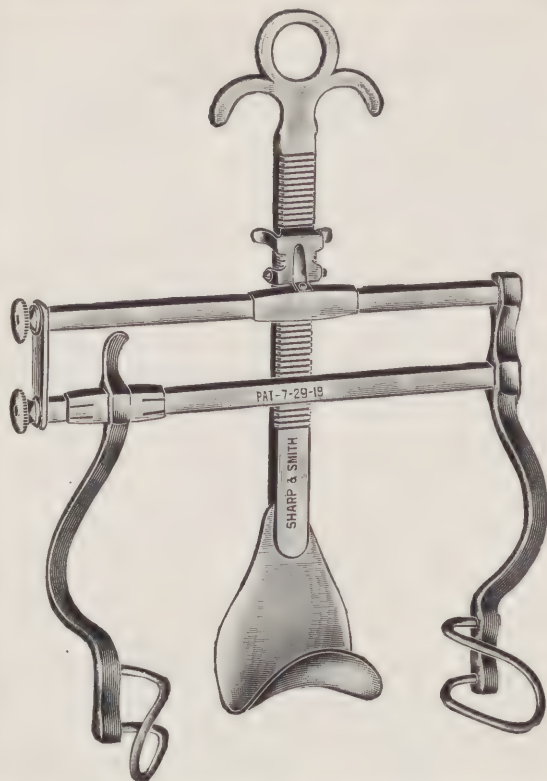
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Restore cell integrity, restore vascular tone, supply needed physiological salts.

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THE DOCTOR IN PROSE AND POETRY

THE PIONEER DOCTOR*

Wonderful little, when all is said,
Wonderful little our fathers knew.
Half their remedies cured you dead—
Most of their teachings was quite untrue.
“Look at the stars when a patient is ill
(Dirt has nothing to do with disease),
Bleed and blister as much as you will,
Blister and bleed h. as oft as you please.”
Whence enormous and manifold
Errors were made by our fathers of old.

Yet when the sickness was sore in the land,
And neither planets nor herbs assuaged,
They took their lives in their lancet-hand
And, oh, what a wonderful war they waged!
Yes, when the crosses were chalked on the door—
Yes, when the terrible dead-cart rolled,
Excellent courage our fathers bore—
Excellent heart had our fathers of old,
None too learned, but nobly bold,
Into the fight went our fathers of old.

—Kipling.

*We are indebted to Dr. V. H. Stickney, of Dickinson, N. D., for this poem, which appears at the head of his paper on another page. Having never seen the poem, we attempted to verify its authenticity, but could find no trace of it in the Minneapolis Public Library. Dr. Stickney informs us that he clipped it from a newspaper, where it was credited to Kipling.

THE DOCTOR

Of all lives the life of the physician is the most self-denying. He has no time that he can call his own. His home is his office, and furnishes him no sweet retreat from irksome care. The night can never assure him unbroken rest. Sundays are often, whether he will or no, his busiest days. He has no holidays and few and fragmentary vacations. Friendship furnishes him fewer solaces than to other men, for his friends are generally also his patients. He meets men in their morbid conditions—when they are sick and miserable; when they are well he knows them not. He can hardly make a friendly call without the hazard of having it converted, before the evening is over, into a professional one. He fights a battle in which, no matter how many victories he wins, he is sure to be defeated at last—for he is fighting death. And when the defeat, which must come sooner or later, does come, he is fortunate if unreasonable friends do not charge the defeat upon his lack of science or of care. But no man renders a more grateful service; no man comes nearer to our hearts; no man is more beloved. Other services may be as great, but none is more deeply or tenderly appreciated. He summons back from death the child, and puts him in his mother's arms; the wife, and reunites her to her husband. No fee can ever compensate for such a service. He to whom it is rendered is forever debtor to the doctor.

—The Outlook.

A RETROSPECT AND AN APPRECIATION OF THE MEDICAL PROFESSION OF THE NORTHWEST

BY CHARLES LYMAN GREENE, M. D.

ST. PAUL

In offering my congratulations to THE JOURNAL-LANCET on the attainment of its 50th anniversary of service to the medical profession of Minnesota and the Northwest, I must express regret that most urgent demands make it impossible to meet in any adequate way your kind request for some reminiscences of medical practice in Minnesota in the earlier years of my residence here for your "Jubilee" issue.

Coming to Minnesota in 1882 from "down East," the son of a surgeon and teacher of surgery, born into and bred up in the atmosphere of medicine, I had since earliest childhood been in contact with the highest type of physicians, and scarcely expected that what then seemed to me the "Far West," the "Frontier," could present men of the same calibre and equally high ethical standards.

From 1882 until 1887, living and working of necessity in a purely commercial environment, wholly withdrawn from the studies which were to have led to my degree in medicine, nevertheless, I came in contact with several of the leaders of the profession in the Northwest and soon realized that nowhere could one find men of finer calibre, broader views, or higher ethical standards.

One of the first of my acquaintances was Dr. Charles A. Wheaton, a giant in his chosen field, possessed of an extraordinary personality, resourcefulness, readiness in emergency, indefatigable courage, and a technic unsurpassed by colleagues, East or West.

To these virtues he added a geniality born of an abounding love of his fellow-man and the capacity to make and hold strong friends.

The surgery of this period in St. Paul offered an interesting opportunity to contrast the new with the old, inasmuch as Dr. Wheaton was one whose stand for surgical cleanliness and impeccable aseptic technic shone forth against a dark background of old-fashioned surgery.

Later it was my fortune, when acting as Junior House Physician in one of the local hospitals, to see the old and new surgery tried out side by side. The contrast between the operative work of the Civil War and that of the Great War just completed could scarcely have been greater or more illuminating.

Time and space will permit only the briefest comment upon a few of the many medical men who at this period stood in the van of progress in the Northwest and were foremost in building up, not only the standards and personnel of the profession in Minnesota, but those laws and institutions which have done so much to make Minnesotans proud of their great part in advancing the standards for medical practice throughout the United States.

It is difficult now to realize with what courage, resourcefulness, and tenacity of purpose the leading medical men of this earlier day sought to supply the deficiencies of this section of the country with respect to medical education. To an astonishing degree they were willing to sacrifice time and income alike in order that medical schools might be established and maintained.

It would be easy for one who has seen the growth and development of modern medicine in the Northwest and participated in the establishment of teaching of the newer type to criticize and even ridicule the crude pioneer work carried on in these proprietary schools of the early 80's.

The writer would be the last to assume this attitude, for, both as an observer and later as a student in the Medical School of the University of Minnesota, he had an opportunity to see what a remarkable group of teachers were gathered together in the two leading cities of this new country and how extraordinarily effective these were in their teachings, even under the great handicaps imposed by an almost entire lack of laboratory and public-hospital facilities.

In reviewing old numbers of the NORTHWESTERN LANCET recently I found interesting the announcements of the St. Paul Medical College and the old Minnesota Hospital College. In the faculty list of the latter for 1882 one finds evidence of a most commendable unity of purpose as between the physicians of St. Paul and Minneapolis, then bitter rivals.

The names of Dr. F. A. Dunsmoor, Professor of Surgery; Dr. A. W. Abbott, Professor of Anatomy; Dr. C. L. Wells, Professor of Diseases of Children and Dermatology; Dr. George F. French, Professor of Obstetrics; Dr. T. F. Quinby, Professor of Materia Medica and Therapeutics, all of Minneapolis, are balanced by those

of Dr. Jay Owens, Professor of Theory and Practice of Medicine; Dr. Talbot Jones, Professor of Physiology; Dr. C. E. Riggs, Professor of Nervous Diseases; Dr. Alex J. Stone, Professor of Diseases of Women; Dr. J. F. Fulton, Professor of Diseases of Eye and Ear, and Dr. C. A. Wheaton, Professor of Clinical Surgery; all these latter being St. Paul men.

But, alas, in 1886 we find *THE LANCET* carrying two separate advertisements for these two colleges, and we note the disappearance of all the St. Paul men from the teaching roster of the Minneapolis institution.

Dr. A. W. Abbott has become Professor of Diseases of Women; Dr. J. W. Bell, Professor of Theory and Practice of Medicine; Dr. H. M. Bracken, Professor of *Materia Medica* and Therapeutics; Dr. Frank Allport, Professor of Diseases of Eye and Ear; Dr. J. E. Moore being launched as Professor of Orthopedic Surgery. The last-named professor, strange to say, also appears under the same teaching title in the announcement of the St. Paul Medical College,—an achievement worthy of special note.

A new department, that of Laryngology, appears in the Minnesota Hospital College, headed by the late Dr. W. S. Laton, and we note the names of Dr. J. H. Dunn, Professor of Genito-Urinary Diseases and Dermatology; and Dr. W. A. Jones, your genial Editor, who makes his bow as Lecturer in Nervous Diseases.

When, later on, these two faculties became merged into one under the organization of the Medical School of the University of Minnesota, the writer spent one year of most profitable study within this institution prior to taking his post-graduate work abroad.

Since that time, and before it, he has sat under some of the most brilliant men in Medicine in the greatest teaching institutions in the world, and now has no hesitation in declaring that for sheer teaching ability, that peculiar gift, possessed by a few men, of successfully imparting knowledge to others, certain of the men of these old Northwest proprietary college faculties could not be surpassed.

For charm of manner and method one could not find better examples anywhere than were presented by these two schools in such men as Parks Ritchie, Alexander Stone and, last but not least, that gifted, modest, all-around man, Dr. A. E. Senkler, the simplicity and clarity of whose lectures was the direct reflection of his analytic, orderly, and systematic modes of thought.

What we have said with relation to a few of these men who have lived and served, been loved, and gone before, might well be applied to some of those now living.

Any recollections of these past days would be deplorably incomplete if they lacked reference to that extraordinary man, Perry H. Millard, first Dean of the Medical School of the University of Minnesota, the man to whose efforts the fusion of the pre-existing proprietary schools and the establishment of the state Medical School under University auspices was made possible.

I remember well that, in the course of a eulogy delivered at a memorial service held for Dean Millard, our beloved ex-President, Cyrus Northrop, spoke of him as a "lesser Napoleon." In his own peculiar driving, forceful way he accomplished remarkable things, and, though to outward appearances given over to purely practical matters and methods, he was dreaming constantly great visions far ahead of his day, and these in large part he brought to a successful realization, or, failing in this by reason of his early death, was found to have laid for the future a secure foundation.

Alert, forceful, indefatigable, filled constantly with the altruistic desire to advance the cause of the profession which he loved, he not only established the Medical School at the University, but was more than any other one man responsible for the introduction and passage of the Medical Practice Act of Minnesota, to which we owe the early adoption of a high standard for medical licensure in our state. It was a pioneer law, and its passage at that period of low standards of medical practice seemed an impossibility.

Starting the school with a mere skeleton frame work, Dean Millard loaned the money with which its first building was built (old Millard Hall), went ahead and established excellent departments of Pathology and Histology headed by two of the best men to be found in the scientific world, and secured a building to house them.

Perry H. Millard was a "Fighting Dean," and at this particular period of the history of the Medical School it may be that just such a man and no other was needed.

After his death there followed a short interregnum, during which the genial, unselfish, generous and universally beloved Parks Ritchie guided the affairs of a turbulent faculty.

At the end of this time Dr. Frank F. Westbrook, then Professor of Pathology, was made Dean of the Medical School; and it soon became

evident that its elected head was one of the sanest, wisest, most far-sighted and courageous medical executives that the medical world has ever seen.

Coming fresh from the beautiful working atmosphere of the scientific laboratories of Caius College, Cambridge, where he had won a scholarship and formed life-long friendships with the greatest of Britain's teachers of science, Wesbrook taught, preached, and practiced the highest ideals of co-operative work and service to the State.

His was the master mind, thinking always years ahead, and his also the indomitable will and purpose, masked, even to his intimates and special co-workers, by a kindly patience and sympathetic understanding of the viewpoints of others, which enabled him to make the term of his administration one of continuous progress and high achievement.

He completely re-formed and re-organized the Medical School, united his faculty, and gave to the institution its proper place of leadership in Medicine in the Northwest.

Not the least of his achievements and one of which, to my knowledge, he was intensely proud was the making of the Medical School of the University of Minnesota the school of the medical profession of the State.

At the meeting of the Minnesota State Medical Association at St. Paul in 1911, when the University Hospitals had just been opened, in discussing a paper of the writer (*JOURNAL-LANCET*, 1912, Vol. 32, p. 121), Dr. Wesbrook said, "The essayist has particularly called your attention to the fact that the College of Medicine and Surgery of the University of Minnesota is the college of this Association (State Medical Association) and of the *profession of Minnesota*. The College staff can succeed in giving to Minnesota what she needs only as these needs are realized and presented by the profession."

And again he said, "We all realize that success is to be attained only by co-operation; and your suggestions and criticisms are needed. We shall rely upon your continued help and interest, which have never been wanting."

It is not strange that, holding these views and working month in and month out for years to give them practical form, Dr. Wesbrook should succeed in making the medical profession of this State feel that it had a direct interest in this School and in maintaining the success of that institution.

To a no less remarkable degree also he succeeded in maintaining the enthusiastic and whole-hearted loyalty of the Alumni, who, from year to year, became increasingly proud of their Alma Mater and more and more ready to give their active support and co-operation to any and all measures tending to safeguard its future success and security.

It was a great blow to the Medical School of the University of Minnesota when Dr. Wesbrook was taken from it to fill the higher office, but not, the writer believes, the more important and useful one, of President of the University of British Columbia.

Moreover, it was a blow to the entire medical profession of the English-speaking world when, in 1918, the earthly career of this remarkable administrator and man of men came to its close.

It seemed especially cruel that the institution which this genius of organization and executive capacity had built up should lose him in her time of greatest need and emergency.

I must ask your indulgence for this rambling and discursive communication and, in closing, express my thanks and appreciation for the service which your journal has rendered to the Medical Profession of the Northwest throughout five decades and the wish that it may prosper in every way during the years to come.

THE FIFTY-FIRST ANNIVERSARY IN THE PRACTICE OF A DAKOTA PIONEER

By L. F. BABCOCK, M. D.

DEADWOOD, S. D.

Dr. F. E. Clough, of Lead, S. D., was kind enough to send us this paper read by Dr. Babcock at a complimentary dinner given him on the fifty-first anniversary of his practice, most of this time being spent in Dakota. Dr. Babcock recently passed away.—THE EDITOR

My Brethren of the Medical Profession:

I wish it were in my power to utter words conveying to you my great appreciation for being made your guest of honor for this evening. Few of our profession have been permitted to serve it for more than half a century, and few have been honored with such kindness as you have extended to me tonight, but I hope and pray that all of you may be spared to serve your profession for more than half a century, and that through life you may have such good friends as surround me now.

I cannot speak to you at length, yet I feel under obligation to give you a brief sketch of my professional life. I was born in Dimock, Pennsylvania, on May 24, 1838, and lived there until 1857. I then went to Rockford, Illinois; crossed the plains to Denver, Colorado, in the spring of 1859, and returned to Rockford the same summer. I commenced the study of medicine under Dr. N. E. Chandler. The law of Illinois at that time required three years' study under a preceptor and attendance in a medical college for two years. After being with my preceptor over two years, I enlisted as a private soldier on the 2nd of June, 1862, in the 67th Regiment of Illinois Volunteer Infantry, for three months. I served over four months, during a part of which time I was in Camp Douglas, in Chicago, guarding Confederate prisoners.

A short time after I arrived in Chicago, measles broke out in the camp and I was detailed to perform service in the measles tents, though I had not yet attended a medical college. In September, 1862, we went to Vicksburg, Mississippi, to exchange five thousand Confederate prisoners. We were put on board boats at Cairo, Illinois. I was detailed to the hospital boat during the entire trip. The prisoners were exchanged on the 17th of September, 1862. Col. James A. George, also of Deadwood, was one of the prisoners.

Returning to Chicago in October, I immediately went to Rush Medical College and took my first year's course. In the Spring of 1863 I went home and continued my studies with Dr.

Chandler until the college opened in the Fall of that year, when I again entered Rush. On January 4, 1864, I received my M. D. diploma, so that, including today, I have been a graduate physician fifty-one years and one month.

On the 9th of March, 1864, I received my first contract as acting assistant surgeon in the United States Volunteer Army, and went to Davis Bend, near Vicksburg, Mississippi, for service. In October, 1864, I received my appointment as assistant surgeon to the 64th United States Colored Infantry, but was taken sick and could not be mustered in. On November 9, 1864, I went home, got better, and on the 4th of April, 1865, I took my second contract with the United States as assistant army surgeon. On February 23, 1865, I was put in charge of the President Island Army Hospital at Memphis, Tennessee. I was there when our President, Abraham Lincoln, was assassinated, and I was there when the steamboat Sultana, loaded with discharged United States soldiers, was mysteriously blown up. In July, 1865, I was sent to Pine Bluff, Arkansas, in charge of the sick soldiers of the 79th United States Colored Infantry, and served there until the close of the war.

I went to Omaha, Nebraska, in March, 1866. There was not a railroad running into the city at that time. I was made a member of the Omaha Medical Society, and practiced in that city nearly ten years. I left Omaha on December 23, 1875, and arrived in Cheyenne the next day. I remained there until about the first of August, and arrived in Deadwood, August 8, 1876, and have remained here ever since, continuously practicing my profession.

My practice has extended over the entire Black Hills, from Hot Springs on the south to Stoneville, now Alzada, Montana, on the north; from Sundance, Wyoming, on the west to a score of miles beyond Rapid City on the east. I have made trips in the winter and in the summer, through storm and through sunshine, over all parts of the Black Hills, and have seen much suffering, pain, sickness, and death by disease, by accident, and at the hands of the vigilantes, and by hanging, and I was once called upon to stand under the scaffold and make certificate of death by execution under sentence of the law.

I have been called to attend upon all classes of people,—the preacher and the priest, the law-abiding citizen and the felon, and upon mothers and their babes. I have been called into the homes of the well-to-do and to those living in rude shacks and log cabins, and was once called upon to perform a surgical operation in a saw-mill, having for my table a board on the carrier used to carry logs to the saw-mill. I amputated the patient's arm, having only a rusty wash-pan full of hot water with which to cleanse the parts, and yet the arm healed up by first intention and the patient was out of his house within twenty-four hours. I was called to see another patient who was shot through the lungs and arm. He was in a one-room log cabin, having a fire-place in one corner, and I was given some warm water in a rusty can with which to cleanse his wound; yet he got well.

There were many other cases which I was compelled to treat under similar conditions. Sometimes I had to take pieces of board and make them into splints for all kinds of fractures.

I call your attention to these matters, my

brethren, that you may see how different were the circumstances under which physicians and surgeons had to operate in this community thirty-five years ago, that you may compare them with the conveniences and instrumentalities we have today.

When I came here in August, 1876, there were a number of smallpox cases. One of the doctors called it poison oak and others did not know what it was, but I contended it was surely smallpox. Captain Seth Bullock and myself were appointed to find a location for a hospital . . . and that was the first hospital built in the Black Hills.

Afterwards there were two slaughter-houses erected in the gulch, and sometime after they were erected, certain people thought the water of Kidney Springs, at the mouth of Spruce Gulch, was a sure cure for all kidney diseases and began to peddle the water. The slaughter-houses have been removed for some years, and since their removal we hear but little about the wonderful curative powers of the waters of Kidney Springs.

THE PIONEERS OF THE DAKOTAS

By V. H. STICKNEY, M. D.

DICKINSON, N. D.

THE PIONEER DOCTOR

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Wonderful little our fathers knew,

Half of their remedies cured you dead—

Most of their teaching was quite untrue.

"Look at the stars when a patient is ill"

(Dirt has nothing to do with disease),

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Yes, when the terrible dead-cart rolled,

Excellent courage our fathers bore—

Excellent heart had our fathers of old,

None too learned, but nobly bold,

Into the fight went our fathers of old.—*Kipling*

In attempting to write a story of the pioneer doctor of the Dakotas, I find myself embarrassed by the fact that no authentic record remains of his achievements, and the registry of the hardship of his practice is only a memory in the minds of those who are left and who shared with him his alleviating work in those colorful days. So

my story must not be taken as an exact record, but, rather, considered a tribute to the memory of those men who came into the territory when the states were young and we were living on the fringe of civilization,—the William McLures of Dr. Watson—"the real fighting men of the profession" of Kipling.

When we study the qualities that mark the character of the pioneer, we do not find them the usual gifts of the average man. These men who have been lured to the frontiers of the world since civilization began, had in them much of the primal man,—the spurring impel of the wild—the spirit of adventure—the love of romance. The men who first set up the standard of medicine in the Northwest had all the qualities and traditions of the pioneer. They were not exceptional in their medical attainments or skill. In the schools from which they graduated they were not marked as men of especial merit in medical lore, but were, rather, of them that were heralded on the campus as they battled in the mix-up of the scrimmage or tore through the ends for a touchdown in a football game.

The coming of the Northern Pacific Railway opened up a vast territory to settlement that for years had been held by nomadic bands of Indians, and the occasional white hunter whose venture-some spirit lured him to the land of the "big game." The sweep of prairie land that stretched away from the Red River of the North to the Missouri, and sloped up across the Bad Lands to the foot-hills of the Rockies, was a vast domain, clean and free as it came from the hands of the Maker of Worlds—"God's Country" in the fullest sense of the term; the land of magnificent extremes, where the sunsets were the grandest, the air the clearest, the land of which Wister wrote and Foley sang. The chinook winds coming up from the southwest in the early spring, loosened the grip of winter and sent the yellow waters in torrents down the valleys, choking the streams with drifting ice. In midsummer the sun shone down from a brassy sky till the atmosphere shimmered in heat like the air above a burning kiln, and the hot winds came up from the south like the withering blast from a furnace. It was the land of the long, luxuriant autumn time, with the pale, cloudless skies and the waning, hazy days, when the winds blew fresh, and the whitefrosts came in the night, touching the foliage in the coulees and along the streams into slashes of color that gripped the soul with the grandeur of it all; the land where in midwinter the perishing blasts came down from the north, shrinking up the earth till the ground heaved and cracked like contracting ice on a pond, and the mercury hung for days between the bulb and the zero mark. Wonderful land! Grand stage-setting for that glorious drama—"The Winning of the West!" Grand properties, too. The waning herds of buffalo, the big game, the bull teams trekking out from the railroad to the Hills, the stage coach with its plunging team, the wild broncho, the lariat, the sagging cartridge belt and gun. There were wonderful players upon the stage,—Roosevelt, Gaul, Jud LaMour, Sitting Bull! Scores of humbler mortals were here,—each taking his part with equal virile zest. The college man from the East, touching elbows with the outlaw who had left a splotch of blood somewhere along the trail; the stolid Indian; the cow-puncher, the most picturesque man of his time.

The pioneer doctor, often in the center of the stage, played his part and played it well. He rode out into the night when the clouds veiled the stars, careless alike of blinding sleet or drifting snow. He rode at grilling speed until his

horse, taxed to extreme fatigue, stood with heaving sides and nose drooping to the ground; then he caught another and rode on. He rode relays to a ranch way out yonder on the prairie, over a course of a hundred miles at a speed that seemed incredible,—and at the end of his journey operated, for gun-shot wound or cruelly broken bone, on the box of a mess-wagon turned upside down on the prairie. He sterilized his instruments in a Dutchoven, and gave his own anæsthetic. No skilled assistant here! No council! No white-clad nurse! He drank black coffee to steady his shaking hand and searched his soul for support, that the operation might be well done. His tired day's-work finished, he rolled himself up in a "tarp" for a few hours' needful rest and slept the sleep that only exhaustion may know. He turned out in the early morning when the stars were yet shining, and drank his coffee and ate his bacon and hot biscuits while the gray dawn was streaking the East.

His breakfast finished, he mounted his horse with stiffened limbs, and rode back over the trail where but a few hours before he had come at such urgent speed, his body swaying in the saddle from fatigue, his head nodding from lack of sleep. The bridle rein is slack; the cruel spur withheld. The scent of the damp prairie is in his nostrils, the cadence of the liquid notes of the meadow lark in his ears. The mist is hanging low in the coulees, and the sun coming up over the eastern rim of the world is bridging the valleys with beams of gold. He picks up his relay mounts at the ranches where they had been left, and rides leisurely home.

The weary trip was done, another on the morrow perhaps—many of them during the varying days of the year. Sometimes he rode alone; sometimes with a guide riding at his side. He knew the landmarks through the radius of a hundred miles and was rarely lost. At night, when the trail grew faint, he held his course by the guiding stars. When the unexpected blizzard swept down upon him and the drifting snow hid the trail, he sought a brush patch in a coulee and tramped back and forth, lest he should sleep, till the storm was spent. His brain was stocked with all the cannie knowledge of the plainsman. Exacting toil had toughened his muscles and life in the open had built up within him the resistance of an athlete. He was not only a physician, he was a councilor,—a friend. He shared the lives of those who lived in the lonesome places and his heart went out in sympathy for the hard condi-

tions of their lives. His practice often embraced a territory as large as a New England state. Tedious trips on his errands of mercy made him a stranger in his own home. His work was hard and his reward small; but he loved it and would not have changed if he could. He lived a life of wholesome usefulness and richly deserved the honor and respect that was bestowed upon him. Sometimes when the battle with death had failed, he tarried on and helped prepare the dead, and perhaps upon the morrow, read the burial service ("Ashes to ashes, dust to dust"), as the rude box was lowered into the grave on the wind-swept prairie.

Later on when the trail crossings had been made passable and light vehicles introduced, he made his rounds with a pair of leaping bronchos hitched to a buckboard, and later still with a closed top buggy the fatigue of the journey was much reduced. However, he was never completely weaned from a saddle horse, and even to this day gets the keenest pleasure from a brisk ride over the prairie when the moist sod gives under his horse's feet and the air is hazy and the fresh winds sweep over the plains.

His early training was lacking in clinical experience, hospital training, modern equipment, and all the many other things that today send men forth from the schools into medical practice so capably prepared. But he had courage, resourcefulness, adaptability. He carried into his day's work all that scientific medicine of the time had to offer. His library held the most recent medical books and he read the best medical literature. The faith that a trustful clientele had in him, spurred him to extreme effort. He took courses in the hospitals and clinics in the Eastern cities under the best teachers that he might not betray the trust of his patients.

His voice was cheerful, his steady hand assuring, and his poise in the sick-room gave his patient courage to fight back to health.

Thus the pioneer doctor of the Northwest lived his day and played his part. Modern learning has swept away many of the things he cherished, but he knew the medical practice of the time and gave the best he had. He was a sturdy exponent of that fine race of men who, in all times, have kept the faith and upheld the standard of the profession on the frontiers of the world.

A GREAT HALF CENTURY

By F. R. SMYTH, M.D.

BISMARCK, N. D.

Fifty years is a short time in the history of a nation, but the past half century has probably made more history in the practice of medicine than all the time that has gone before.

Certain it is that all the history of practising physicians in North Dakota has been made in much less time than has elapsed since THE JOURNAL-LANCET was established in 1870. In that year there were not only no physicians in North Dakota, but there was no such state as North Dakota.

As far as the city of Bismarck is concerned, the first physician located here in 1872, the year the town was started. This physician, Dr. B. F. Slaughter, was an army surgeon, stationed at Fort Rice on the Missouri River at a time when it was necessary to have forts and soldiers to keep the Indians in control. As usual, when it was known that the crossing of the Northern Pacific Railway was to be located where Bismarck now stands, there was a great rush to be in "on the ground floor" of what was to be the metropolis of the West. The medical profes-

sion did not make as good a showing as the legal in the list published in the first number of the *Bismarck Tribune*, issued on July 11, 1872. There were four lawyers to one lone doctor. At that period of the city's history, however, death usually came rather suddenly, and the only service a physician could render was when he officiated as coroner.

In 1879, when the first directory of the city was published, there were four physicians in the city, and, as far as known, the total number in the territory that now constitutes the State of North Dakota did not exceed one dozen. Hospitals, except at military posts, were unknown, and trained nurses had not been heard of.

The pioneer in medicine had one great advantage over the modern practitioner in that he had no competition. The territory was all his, and trips of hundreds of miles to see patients were not uncommon. Those of our profession who have had the privilege of hearing Dr. V. H. Stickney, of Dickinson, N. D., describe his ex-

periences in the early days can appreciate the difference between the past and the present practice of medicine in the West. [See Dr. Stickney's paper on another page.]

According to the A. M. A. Medical Directory

there are now 600 licensed physicians in North Dakota; and the fact that THE JOURNAL-LANCET has existed from the time when there was not a single licensed physician here, shows, not only its staying qualities, but the faith of its founders.

NOTES BY AN "85ER"

By JAMES GRASSICK, M. D.

GRAND FORKS, N. D.

I am not an "old timer." I cannot lay claim to belong to the "Honorable Aristocracy of the Catfish," the "Voyageurs of the Dog Train," the "Pioneers of the Ox Cart," or the "Passengers of the Stage Coach." I am just a plain "85er." But even at that late date a physician in North Dakota had to face some at least of the inconveniences of pioneer life.

The methods of travel characteristic of those historic periods had been superseded by those less primitive some five or six years previous to my coming. Comfort and luxury, however, brought with them financial demands that in immediate postgraduate days were not easily met, and dire necessity forced me to resort to such means of locomotion as I could have "without money and without price."

Medicine is the hand-maiden of Civilization. The latter part of the "Seventies" and the first of the "Eighties" is notable for the opening of the prairies of the Red River Valley to settlement. Prior to this time there were scattered settlers mostly along the Red River and the wooded tributaries thereof, who had come by ox cart, team or river route, and had made homes in the sheltering timber. The great expanse of plain to the west was as yet the home of the bison and the hunting-ground of the Sioux. With the coming of the "iron horse" the whole scene was changed, as if by magic, from primitive natural conditions to those where man vied with man in making the prairies "blossom as the rose." In a few years the whole valley was thickly settled, so that by 1885 there was not a claim or pre-emption to be had for many miles west of the Red River.

Nearly all of the luxuries and many of the necessities of life were denied one in those days of pioneering, but there were a joy, a freshness, a freedom, and a feeling of ecstasy that laughed at difficulties, and an optimism that lent a tint of glory to the hardships and privations of these first years on the prairies of Dakota.

Into this world in the making I came, and it was not long before I touched elbows with two

neighboring physicians, Dr. W. P. Cleveland, of Caledonia, thirty miles to the east, and Dr. H. H. Ruger, of Devils Lake, one hundred miles to the west, types of men characteristic of the times and environment.

In 1879, Dr. Cleveland came by stage coach and settled at what was a Hudson Bay trading post, at the junction of the Goose River with the Red. He was the first regular physician in the Valley between Grand Forks and Fargo, and was also the first physician to register in what was then the Territory of Dakota. With a field of fifty miles radius and no opposition, some idea may be had of his work. The environment of the West was not conducive to drawing-room etiquette, and the exterior did not always give a correct impression of the real caliber and character of the individual. He was a many-sided man. Though first and foremost a physician in the true sense of the word, as occasion demanded, on the rostrum he could hold an audience spell-bound with a burst of oratory, entertain a crowd in the street with a recital of adventure, instruct a group of farmers with a lecture on stock-raising, enthuse a Sunday-School Convention with incidents of missionary life, and amuse the youngsters with an exhibition of horsemanship.

To such as he in the days when our Western plains were being settled, Dakota medicine owes a debt of gratitude that can never be fully repaid.

Dr. Ruger came to the Territory of Dakota with the 7th Cavalry as acting assistant surgeon, then under the command of General Custer, in April, 1873. They followed the trail from the South, where they were previously stationed, to Yankton, and from there they marched northward, following the Missouri River for about five hundred miles, until they reached Fort Rice. From Fort Rice their course was almost due west along the original survey of the Northern Pacific Railway, and their summer campaign became known as the "Expedition of the Yellowstone." Dr. Ruger served with the 7th Cavalry under Custer during all of this expedition, and

came with Custer to Fort Abraham Lincoln in the autumn of that year. From there he was transferred in the winter of 1874 to the 17th Infantry, under General Crittenden's command, and was stationed at Fort Abercrombie. From there he was transferred to Fort Seward in the fall of 1875, to serve with the 20th Infantry, under command of Captain John Patterson. It was there, in the summer of 1876, that news of the Custer massacre reached them.

In the fall of 1876, he was transferred to Fort Totten, serving with the 20th Infantry, under command of Colonel Lewis Cass Hunt. He remained with the 20th Infantry at Fort Totten until his retirement, in 1884.

During his eight years at Fort Totten he practiced medicine among the Indians at the request of Major James McLoughlin, then Indian Agent at that fort, and was known to the Indians as "Big Medicine Man."

After his retirement he located at the city of Devils Lake, on the north shore of the lake directly opposite from Fort Totten. Mr. James

J. Hill had extended his railroad, now known as the Great Northern, to the lake, which was its terminus for a number of years, before pushing on to the Pacific Coast. The settlers' shacks were scattered, and many cases of freezing came under Dr. Ruger's care. His method of treatment was, first, to wrap the limbs in absorbent cotton, holding it in place with a roller bandage, keeping the dressings saturated with a diluted Labarraque solution until the line of demarcation was definitely formed, before attempting amputation, thus antedating the Dakin-Carrel method.

Always faithful to duty, through danger, storm, and cold, his modesty was the predominating feature of his sturdy character. He never failed to respond to the call of duty and was one of the first to practice surgery upon the Dakota plains. These were representatives of our pioneer physicians. Coming in the full strength of robust manhood, they gave their best for the relief of suffering. Sympathetic, self-denying, and skillful they leave a glorious record to their state and profession.

THE NORTHWEST IN 1870

BY W. G. RICHARDS, M. D.

BILLINGS, MONTANA

Invitation to write a few words for what I gather is to be a jubilee number of *THE JOURNAL-LANCET* is at hand. To my mind, however, nothing one can say is half as significant as the fact that the paper has successfully attained the age which it now celebrates. In thinking of the Northwest in 1870 one's conception is of a rather primitive community, sparsely populated, and offering little inducement to intellectual activity, but when the physicians of that time essayed to enter the field of medical literature at once they showed themselves men of large vision as to the future of the country which they had made their own, and with a keen realization of their own responsibility for the progress of medical science, anticipating, indeed, the doctrine which Sir James Mackenzie so ably and earnestly preaches, that the future of medicine depends upon the accumulated and recorded observations of those engaged in its actual practice, rather than upon the more academic researches of the hospital and the laboratory.

In their final choice of a name (*Lancet*) they showed, too, that their ideals in medical literature were of the highest type, and that the journal

they then founded has during fifty years so well sustained the traditions of its venerable prototype is emphatic tribute to both their own ability and their success in the training of those upon whose shoulders the burdens which they so courageously assumed were destined to fall.

In the matter of traditions new countries and new institutions are at a tremendous disadvantage. It is to these that each generation turns for inspiration and encouragement, and without them there is a real danger that ideals may be low and standards poor. But those hardy pioneers who blazed the medical trail in Minnesota and the Northwest left such a broad and well marked path behind them that those who follow can plead no excuse if they stray from it. Nor, indeed, does there seem much danger, for the articles you publish combine high excellence with much interest, scientific erudition with practical advice.

May *THE JOURNAL-LANCET* long flourish and celebrate many jubilees, but how interesting it is to speculate on its comments one hundred years hence on the gross ignorance and crude practice of the present day!

FIFTY YEARS OF MEDICAL EDUCATION IN MINNESOTA

BY RICHARD OLDING BEARD, M. D.
University of Minnesota
MINNEAPOLIS

Fifty years, measured by the calendar, in the life of so young a State as Minnesota is a brief period. But measured by the intensity and rapidity of its social, economic and educational growth, bringing it by a sort of mass movement up to the level of other and older states, it is a long time. In these days of ready intercommunication when ideas travel even faster than men or merchandise, new communities are compelled, as a matter of self-preservation, not only to keep the pace but to catch up with the progress of their older neighbors. Occasionally it happens that the impetus of development in a virgin social soil carries them beyond the goal.

Medical education in Minnesota typifies the biologic process by which human society grows. Of necessity it goes through the same successive phases of growth everywhere, but in direct ratio to the energy generated by the conditions of growth is the rate at which this succession of changes occurs. So rapidly in the history of medical education in the State have these kaleidoscopic changes followed each other that it needs a mental cinema to tell the tale.

Without attempting to attach a definite term to each phase of progress, the story discovers three periods distinguished each by its dominant tendencies: First, the period of natural selection; second, the period of promotion; third, the period of artificial, or by better definition, intelligent selection.

The period of natural selection antedated the beginning of the past half-century, but it extended well across its time threshold. It was the day in which predisposition and environment determined the young man's choice of a profession. There were no preliminary requirements. He passed no entrance examinations. Indeed, he entered nowhere but into the local doctor's office. He was accepted by his preceptor if the latter happened to need a helper and had a liking for the rôle of the schoolmaster. He read medicine, he compounded pills and powders, he assisted in the care of the patient, he did the elementary bookkeeping, he attended to the family and professional chores, he followed in his teacher's well-worn footsteps, he became his professional offspring; sometimes he remained in tutelage for several years; often he married the doctor's daughter, and sometimes he succeeded to his pre-

ceptor's practice. He was distinctly the product of natural selection.

All of Minnesota's old preceptors have passed away. Perhaps a preceptor's pupil, here and there, still remains. Thirty years ago, the writer knew several physicians who counted their former personal students on the fingers, and occasionally on all the fingers, of one hand.

Primitive, but very personal, was this pioneer method of medical education. It fostered the spirit of the cult. It maintained a filial relation between the younger and the older generation. If it had in it little of progress, it did much to preserve the traditions of the profession. Practice counted for more than theory, and instruction, so far as it went, was certainly individual. Possibly it was because it belonged to the past, possibly because it had some appealing virtues of its own, but it appeared, at least to the generation that followed it, to have something of "the grace of a day that has fled."

The second period, that of the promotion of medical education, may be characterized in various ways. It was the period of organized, and often of very much disorganized, teaching; of the birth and development of the private medical college. It was the result of rapid communal growth and of the consequent sudden demand for a large supply of physicians. Overworked doctors felt, as well as saw, the need of more doctors. They met the occasion, as the profession has met every public need; and because they were very busy men with little time to devote to the tasks of teaching they met it by the adoption of the mass method of making more doctors. Once committed to the business of formal medical education they were compelled by social conditions to its continuance. Colleges multiplied; competition became keen; advertising prevailed; preliminary requirements, at first nominal, were only slowly advanced; the standards even of that day were depreciated for years. The didactic method was almost exclusively employed. Lectures followed one another in hourly succession. Laboratories were long confined to chemistry alone. The dissecting-room, crude and insanitary, was a place taboo. Its source and supply of anatomic material were matters of suspicion. Amputated limbs were frequently dissected. The cadavers and the clinics were alike

scarce to the famine of the schools. Hospitals were hospitable to students, but casual in their facilities for teaching.

Teaching positions were sought by members of the profession. A certain halo hung about the rank and title of the teacher. The real spirit of teaching, native to the few, was but gradually acquired. No salaries were paid. One never heard of any dividends. The self-support of the schools by students' fees was precarious. Deficits were commonly paid either from the faculty pockets or by public subscription. Occasionally some form of social entertainment was given "to raise the wind." Nevertheless men taught from love or ambition, or both, and persisted in teaching year after year, sustained sometimes as with the perseverance of the saints and sometimes, it is said, by the indirect perquisites of the job. It has been hinted that the specialist's clientele grew out of the graduates of the College.

The first attempt at formal education in medicine in Minnesota was made in the little stone dead-house which adjoined St. Joseph's Hospital, St. Paul, in 1871. Here students gathered in conference o' nights with a group of preceptors who quizzed them on their studies; and here amputated limbs and an occasional posted cadaver were dissected by the boys, working upon a rude wooden bench, in turn.

In the succeeding year two preparatory schools were launched, the one in St. Paul and the other in Winona, to prepare medical students to enter a medical college. Dr. Alexander J. Stone was the moving spirit of the one and Dr. Franklin Staples of the other. While these efforts were of short life because the demand for college teaching crowded hard upon their heels, these two men are to be hailed as the pioneers of medical education in Minnesota, and all their days they continued to be among its ardent promoters. Dr. D. W. Hand, Dr. Chas. A. Wheaton, Dr. Talbot Jones and Dr. J. H. Stewart were on the staff of this embryo institution in St. Paul. Its instruction was given in the offices of the faculty.

By the year 1879, the teaching ambition of certain men of the medical profession in Minnesota was re-stimulated and the first full-fledged private medical college, known as the St. Paul Medical College, was organized under the auspices of Hamline University. Dr. Stone headed the new enterprise and Drs. C. A. Wheaton, F. A. Dunsmoor, C. E. Riggs and George F. French were of its early faculty, proving that in those early days Minneapolis and St. Paul could

live and work together. In 1881, the St. Paul College went out and the Minnesota College Hospital, with Dr. Dunsmoor as its Dean, combined the teaching forces of the two cities in still larger numbers. Its headquarters were in the old Winslow House, upon the site of which the commercialized Exposition Building now stands, and its clinics were conducted all over the Twin Cities. For the time being, it was independent of any denominational influence. In 1884, it announced the first free clinic ever given in the State.

In 1883, the Minneapolis College of Physicians and Surgeons, which subsequently came under the wing of Hamline University, was chartered, with a faculty of twelve teachers. It continued its independent existence longer than any other school, finally merging in the University College of Medicine and Surgery in 1908.

In 1885, a cleavage of the Minnesota College Hospital occurred along the lines of the city limits of Minneapolis and St. Paul. The original pioneer college was revived under a new charter and with the old name of the St. Paul Medical College. As in the history of so many private medical schools of that day, it was a case of multiplication by division.

In 1886, an addition to the number was made in the creation of the Minnesota Homeopathic Medical College, under the deanship of Dr. Philo L. Hatch and, later, of Dr. D. M. Goodwin.

Meanwhile a new era was coming to birth. The period of promotion was drawing to a close, so far as the State of Minnesota is concerned. It had served its term. It was perhaps the inevitable and only means of meeting the demand for a rapidly produced army of doctors to supply the needs of the rapidly growing communities and the multiplying isolated homesteads of the State. Under the competitive conditions it had begotten it had over-reached its original purpose. The graduates of the schools, as well as the schools themselves, had become too many. Their output tended toward depreciation. Into the situation came two new factors, both of them introduced by a man who could see clearly into the future, could make compromises with the present and could marshal and direct the forces necessary to the accomplishment of his generally beneficent ends. That man was Dr. Perry G. Millard. With singular foresight he first promoted the organization of an examining body at the University of Minnesota to determine the qualifications of medical graduates. Then he secured the passage of

a Medical Practice Act by which legal endorsement of those qualifications might be given to these graduates.

So soon as these two agencies had done their expected work, he proceeded to the development of a plan for the disappearance of the private colleges of medicine by their mergence into a University Medical School. His attempt was successful so far as three out of four of the existing schools were concerned. He made the mistake of not including the Minneapolis College of Physicians and Surgeons. He was compelled, also, to a compromise which led to the organization of a homeopathic, as well as the regular, school, upon the Campus. These errors were not neutralized until long after his death.

In 1888, the new era in Minnesota dawned, after its coming light had glimmered upon the medical horizon for five years. There were few, indeed, among medical educators who knew until that light actually broke what that long gathering glow of the rising of a new day meant. It meant very much for Minnesota. The period of intelligent selection in medical education, under the directing authority of the State University, had come.

In the spring of that year, the three schools referred to surrendered their charters. From their faculties were chosen 29 men to man the University College of Medicine and Surgery, with Dr. Millard, as Dean, at their head. Of that original faculty 18 members have died, 10 have retired from service, and one only, the writer, remains on the present staff of the Medical School.

The transition to this last period of medical education in Minnesota was completed when, in 1908, the Minneapolis College of Physicians and Surgeons, known then as the Medical School of Hamline University, closed its doors and turned its students over to the University for the completion of their training.

Progress has been rapid since the year 1888. The Medical School of Minnesota has always ranked in the A group of colleges, but the standards of the A group have been gradually strengthened and the School has habitually been in the advance of every movement. It has established and it must maintain itself among the leading University schools of the country on that basis. It has not been, and should not be content with adhesion to the average qualifications which are demanded of an acceptable group of colleges by the educational bodies whose business it is to

conserve but not to initiate gains. Minnesota has earned in the past the reputation of a pioneer in medical education, and that is something which carries with it the obligation to live up to her past in the standards of her present and the progress of her future. She has had an enviable record which justifies the designation of the period of medical education which she has dominated as that of intelligent selection.

Preliminary requirements have advanced from the high school diploma, to one and then to two years of academic study. That study must include certain recognized pre-medical subjects. Its quality, as well as its quantity, must be such that with the super-addition of two years of satisfactory work in the Medical School, it will justify the award of the Degree of Bachelor of Science.

The course in medicine has been extended from three to four years; with the premedical studies to six years and with the required internship to seven years.

Methods of teaching have been adjusted to the demand for more individual training. The didactic courses have in sufficient degree been replaced by laboratory and clinical work. The clinical clerkship, employed in direct study at the bedside and in the dispensary clinics, has proved its great value. The student internship which prolongs this opportunity in a resident relationship to the hospital is on trial with good prospects of benefit to the student. Graduate internships are supervised and can only be taken in hospitals which are standardized and approved. An elective system operates with partial success.

These requirements serve, or should serve, as the mechanism, at every step of the student's progress, of the intelligent selection of the fit,—as means of exclusion of the unfit. They are intended to serve for the testing out of the medical student body in the interest of the public to which the future doctor is to minister.

But to these means of selection, another and an initial method has been added at the end of the student's premedical years and prior to his admission to the Medical School. It has been necessary to limit the registration in the School to the level of its capacity to fitly teach. This is done by a selective process, in which the applicant's previous attainments, quantitatively and qualitatively, are considered, in which his physical fitness is tested, in which references to his neighborhood, school, and college acquaintance are secured; in which his mental acumen and therefore his mental age are determined. While

many apply, a fixed number (90) only are chosen.

Such intelligent selection, applied in the beginning of, and continued through his entire medical course, is possible only under the authority and sanction of the teaching institution to which the medical school is attached. It justifies the further definition of this period in medical education as the day of the University Medical School.

To this unification of medical teaching under the control of the State University, the State of Minnesota has fortunately attained. It sets its own standards and must maintain them in the interest of the medical profession, in the interest of the medical student himself, but, most of all,

in the interest of the public to whom the University must guarantee the fitness of its graduates for the practice of their profession, the safety with which the health and the lives of the people may be committed to their hands. The end-result of the intelligent selection of the student of medicine must lie in this guarantee which the public has the right to demand.

Great advances in medical science and consequently great progress in medical education invite the State to keep her Medical School not only in the front rank but in the major group of the University schools of the country.

MEDICAL LICENSURE IN THE DAKOTAS DURING THE PAST FIFTY YEARS

By G. M. WILLIAMSON, M.D., L.R.C.P.&S., EDIN.

GRAND FORKS, N. D.

It might interest many of your readers, especially the young men, to know something about the qualifications required in order to procure a license to practice medicine in the Dakotas fifty years ago when *THE JOURNAL-LANCET* was established, and to note the progress in standards since that time. It might also serve to refresh the minds of the older practitioners as to the conditions existing at the time they received their licenses. To them we owe much. They were the pioneers who guarded zealously the traditions of the profession, and looking to the future formulated plans and laid the foundation on which are established the splendid standards of today.

Going back to the early days, we find the law controlling the practice of medicine as follows:

Territory of Dakota—Code of 1869.

Who may practice medicine?

It shall be unlawful for any person within the limits of said Territory who has not attended two full courses of instruction and graduated from some school of Medicine either of the United States or some foreign country or who cannot produce a certificate of qualification from some state or county medical society, and is not a person of good moral character, to practice medicine in any of its departments for reward or compensation, or attempt to practice or prescribe medicine or medicines for reward or compensation for any sick person within the territory of Dakota.

Provided that in all cases when any person has been continuously engaged in the practice of medicine for a period of ten years or more, he shall be considered to have complied with the provisions of this act.

In those days, owing to the sparsely settled condition of the country, any person who had any

medical training or who possessed some natural ability in nursing the sick could obtain a license. The early settlers needed some one who could give them advice when they were ailing, and it was not a very difficult matter for a person to get proof that he had practiced medicine for a period of ten years. No doubt many frauds were perpetrated, but much good resulted, and from this beginning our present efficient standard resulted.

The next change came fifteen years later. The General Laws of Dakota, 1885, referring to "Who may practice medicine," read:

No person shall be permitted to practice medicine in any of its departments in this Territory unless he be a graduate of a medical college, or unless upon examination before a board composed of the superintendent of public health and two other physicians to be selected by the territorial board of health, such person shall be found upon proof to have been actually engaged in the practice of medicine for a term of not less than ten years, and no person shall practice medicine unless he be of good moral character and is not a habitual drunkard.

If a person possessed the above qualifications, a certificate was issued to him by the Superintendent of Public Health upon payment of a fee of two dollars.

Seven hundred thirty-nine licenses were granted under territorial laws.

Territorial license No. 1 was granted to Dr. William Pitt Cleveland, of Caledonia, Traill County (now North Dakota) on June 5, 1885. He was a graduate of Bowdoin Medical College, Maine, July 6, 1879. Dr. Cleveland was one of

the staunch pioneers of medicine in the Dakotas, and is at present in active practice at Caledonia.

License No. 3 was granted to Dr. I. N. Wier, Fargo, Cass County, N. D., June 5, 1885. He graduated from Rush Medical College, February 26, 1878. Dr. Wier practiced in Fargo for many years and was one of the best known physicians in the Red River Valley. He was one of the members of the first state Board of Medical Examiners.

License No. 8 was issued to Dr. H. M. Wheeler, Grand Forks, N. D., June 9, 1885. He graduated from the University of Michigan, March 1, 1880. He is in active practice at present, and served for many years as Secretary of the State Board of Medical Examiners, always taking an active interest in maintaining medical standards in the state. He is at present serving a second term as mayor of Grand Forks, where he has lived and practiced since 1881.

License No. 29 was issued to Dr. F. A. Spafford, Flandreau, S. D., and License No. 52, to Dr. H. J. Rowe, Casselton, N. D., one of the associate editors of this journal.

License No. 257 was granted to Dr. R. M. Evans, Minto, Walsh County, N. D., October 15, 1885.

So far as I know, Dr. Evans is the oldest graduate in active practice in North Dakota. He graduated from the College of Physicians and Surgeons, Ontario, May 27, 1869. He is a man of marked ability and rare attainments, serving the public in the community in which he lives in various capacities, having been time and again elected to positions of trust and responsibility.

Dr. Evans is that rare type of the kindly, courteous old gentleman who has always remained young, keeping abreast of the times. His well-stocked medical library is an inspiration to any young man. It is seldom we find a man who has gone through the trials and struggles of the pioneer physician who takes such an active interest in the progress of scientific medicine.

In Dr. Evans we have the highest type of the professional gentleman developed, kind and considerate, the gentle physician, friend and advisor to those in need. Among the profession of the Red River Valley he is held in the highest esteem as the type of the ethical physician honored and respected by all—to know him is to love him.

The law of 1885 was a step in advance of that in the code of 1869, and a better control over the men who sought to practice in the territories was obtained. Men trained in the best colleges of

the East were getting control of affairs medically, and the general trend of the profession was upward. When the territory was divided in 1890, and North Dakota became a state, a new medical practice act was enacted at the first meeting of the legislature, which provided for the appointment by the Governor of a Board of Medical Examiners, vesting in said Board the power to grant licenses by examination and to make rules and regulations governing the conditions under which men seeking the right to practice medicine and surgery in the state could obtain the same.

The first Board of Medical Examiners named by the Governor was Drs. Phillip, Burrows, McLachlan, Vidal, O'Brien, Logan, Kendrick, Wier, and Mr. J. M. Cochran. Their meeting for organization was held in the parlors of the Columbia Hotel, Fargo, July 31, 1890. Dr. Burrows was elected president and Dr. Logan secretary.

The first examination was held at Grand Forks, November, 1890. Three candidates applied for a license, and all were successful. License No. 1, granted by examination, was to Dr. Dwight S. Moore, a graduate of the University of Nebraska Medical College, 1887. License No. 2 to Earl Strain, University Philadelphia, 1890, and No. 3 to Alfred Richmond, Detroit Medical College, 1872. Regular examinations have been held since that time, and 1,427 candidates have applied for license in North Dakota.

The law at that time required that applicants must produce evidence that they were graduates of reputable medical colleges, and had attended three full courses of lectures of six months each. In 1904 this law was amended, requiring attendance at four courses of lectures of eight months each, and provision for granting license by reciprocity was also made. Up to this time no standard for preliminary education had been fixed. This was left to the discretion of the Board, and, fortunately, at that time such men as Dr. F. R. Smyth, Bismarck; J. P. Aylen, Fargo; Chas. McLachlan, New Rockford; H. J. Rowe, Casselton; H. M. Wheeler, Grand Forks; Paul Sorkness, Fargo; and others serving as members of the Board of Medical Examiners, deeply interested in the profession, had the foresight to formulate rules and regulations of great future benefit.

The foresight of these men in formulating rules and regulations providing first that an applicant must be a graduate of a high school previous to beginning the practice of medicine,

and again in 1908 making another ruling that applicants of 1912 and after must have, as a preliminary education, two years' course in a college of liberal arts, made it easy for the committee having in charge the Medical Practice Act of 1911 to have that condition incorporated into the law passed at that time.

A new Medical Practice Act was enacted in 1911 which was broad and liberal in its application, and all former laws were repealed. The Board appointed as formerly, by the Governor, is given much discretionary power in the making of rules and regulations. In all its work it has endeavored to keep the standard of licensure abreast of the best medical thought.

When we consider that an applicant at the present time must have a two-year course in a college of liberal arts, study four years in a first-class medical college, and, in addition, serve as an interne for one year in an approved hospital before he can apply to take examination for license, then make an average grade of 75 per cent on his written examination, and a further oral test in anatomy, physical diagnosis, etc., and practical work in the laboratory, it certainly

shows that the profession in North Dakota has not been marking time during the past fifty years.

The men who have interested themselves in medical affairs have worked diligently to promote standards in medical education in this state that all might look upon with pride.

And in like manner the management of THE JOURNAL-LANCET, the official organ of our State Association, has not been unmindful of the needs of the profession and has kept pace with the rapidly advancing trend of medical thought, and is sending to our desk every two weeks a journal with its splendid editorials, its carefully edited scientific papers, and bright news columns of which we all are proud.

A medical journal represents the thought of the field it serves, and the excellent character of the articles appearing in the columns of THE JOURNAL-LANCET bespeak a strong active medical profession in the Northwest.

I offer my congratulations to the editor and the manager on this their fiftieth anniversary, for the excellent character and marked success attained by THE JOURNAL-LANCET.

RETROSPECT OF FORTY YEARS

BY JOHN DUNCAN TAYLOR, M. D.

GRAND FORKS, NORTH DAKOTA

Looking backward over a period of forty years since coming to what is now the state of North Dakota, during which time I have been in contact with THE JOURNAL-LANCET first as a pharmacist and later as a physician, I recall how the splendid work of the LANCET has advanced the interests of the physicians of the entire Northwest, not alone from the scientific side, but in enabling them to keep in touch with their fellow workers.

Naturally, many changes have come about in that time with the old men dropping out and new men coming in, but the paper has served to create a large family group with a fellow feeling of sympathy and loyalty to each other and warm personal friendship which cannot be broken.

The hardships of the pioneer physicians are now items of history, and only those who have experienced them can fully appreciate the changes which advancing civilization has wrought. The prairies were then an open country almost invariably snow-covered in winter, swept by fires in the fall, and flood-covered in the spring. The

roads were but trails leading in different directions, and could be followed with difficulty, especially in winter, and when not available a star or a compass gave the direction. Overtaken by blizzards one might have to spend the night in the open with his horse as his only companion.

A tar-papered, sod or log cabin for shelter, with a place on the floor, to sleep in one's own furs over night was almost a luxury.

Surgical work was often done under conditions which would make our modern surgeon gasp and shake his head, yet with results almost up to present-day expectation. One had to take conditions as they were found, and not as one would like to find them. An intelligent settler would be pressed into service as an assistant, and the ordinary cook-stove and wash-boiler made to do all the sterilizing. A single living-room would often constitute the entire house, and would be made to do as an operating-room, or, in fact, the entire hospital. The dressings used were often of such character as would make the present gauze look extravagant. Obstetrical

cases were frequently handled in full view of the entire family. The rifle or shotgun was always a part of the traveling equipment, and fresh meat was by this means constantly supplied in the antelope, jack-rabbit, or feathered game. Hospitals, telephones, and automobiles were unknown, and in the absence of the horse, an ox team might in an emergency be pressed into service if one were too tired to walk. The pioneer physician has passed through all the known means of locomotion up to and including the automobile, and he yet hopes to be able to call upon his patients by airplane before being "called west."

While the days of pioneering have passed reminiscence makes them a pleasurable thought. I recall the use of the present refined Dakin-Carrel solution in its then crude form of solution of chlorinated soda of Labarraque by the surgeon who accompanied Custer on his Yellowstone Expedition, which in its present form was used so

successfully in the late war, made possible by our knowledge of bacteriology which since pioneer days has become a science—so history repeats itself, and there is nothing new under the sun.

Almost all of our old pioneer physicians have now passed, but a more self-sacrificing, hardship-enduring lot of men never lived. Blizzards, storms, and floods had no deterring effect with them, and money was an after-thought with them. The call to duty was always given first consideration. Age did not prevent them from giving their services to their country in the late war, which makes a fitting climax to a useful life. History rarely mentions their names, and yet their pioneering has been an aid in the development of the Northwest second to no other service. To their work THE JOURNAL-LANCET has given its full measure of assistance, and is fully entitled to celebrate the first half century of its existence with pride in its achievement.

SOME MINNESOTA PIONEERS

By J. W. ANDREWS, M. D.

MANKATO, MINNESOTA

This splendid medical publication has reached its fiftieth anniversary, and I ask myself, "Is it possible that fifty years have elapsed since the LANCET had its birth and was wrapped in swaddling clothes?"

I congratulate you, the management of THE JOURNAL-LANCET and the medical profession of the Northwest on the splendid achievements reached and the laurels won by this leading medical publication for Minnesota and some of the adjoining states. It has come to my desk for forty years past, and I have always been interested in its news items and its scientific publications. As said of the babbling brook, "Men may come and men may go, but I go on forever." So it is with some of the great national publications, and as we view the first one-half century of THE JOURNAL-LANCET, and note its growth and progress, first for many years under the name of NORTHWESTERN LANCET and later THE JOURNAL-LANCET, we feel that probably some day it will rank with some of those big publications.

The fiftieth anniversary! Many of the older contributors, Drs. Staples, Stone, Hand, Mayo (W. W.), and C. N. Hewitt, have passed into eternity. These noble pioneers by their able con-

tributions did much in laying a strong foundation for the future high position now enjoyed by THE JOURNAL-LANCET in the annals of medical journalism. These splendid men, though now numbered among the dead, are not the dead: they are the living because their noble work, deeds, and characters live in the hearts and the lives of those who follow them.

I do not know just what system or method THE JOURNAL-LANCET uses in correcting manuscript and proof-sheets, but I have observed that the spelling, punctuation, and other typographical features have very nearly reached perfection, if you will allow a non-expert to judge.

THE JOURNAL-LANCET has been very active, not only in Minnesota but in North and South Dakota and Montana, in raising the high standard of the medical profession that now exists in these states. As we look into the future, let us hope that the past achievements of the LANCET will be even greater as the future develops before us, and, while the present editor, manager, and staff will have laid aside their work long ere the next half century shall have passed, let us hope that their successors may do honor to the glorious past.

PIONEER DAYS

By H. J. ROWE, M. D.

LISBON, N. D.

Time passes and with it many of the pioneer physicians, and we who remain can but add a word of commendation for the trying work done by the hard working doctors of the Northwest. In looking back over forty years of pioneer life in this new country of North Dakota when we were obliged to make long journeys and seek out our own roadways over the bleak prairies, there are many missing faces of those whose geniality we enjoyed and whom we were wont to meet and greet professionally and socially. So far as recollection serves me not a single physician who was in actual practice when I stepped into the arena in June, 1879, remains within the bounds of the state. The only doctor in the valley counties that preceded me and remained continuously in practice was Dr. Edward M. Darrow, of Fargo, who died on November 25, 1919. The old landmarks are gone. Many of the earlier doctors have gone where climatic conditions are not so severe and the work incident to a professional life is easier.

In the earlier days medical literature in the prairie country was not so plentiful as at present, and professional practice was more laborious because of the slow method of travel compared with the present method of autoing and flying, and there was less time for mental exhilaration obtained by reading medical journals. The scene has shifted, changes are taking place daily, and new faces are seen at our annual medical meetings. In pioneer days a man was left to his own resources entirely, assistance when most needed was difficult to obtain, and in emergencies the distance was such as to make it impossible to get help in a serious case in time to be of service to the doctor and helpful to the patient.

There was one redeeming feature in being unable to get assistance in severe cases: it brought out what was in a person and, if there was any initiative, it found opportunity for development and made the doctor more reliant and resourceful to meet an emergency. Medical societies were few and the distance to be traveled so great that it was beyond the privilege of many to take advantage of their meetings. Books were always plentiful, but few men in practice had an inclination to do much reading after an all-day ride and an all-night wait, only to be informed on their return home that another extended trip in an

opposite direction awaited them. Medical journals could be secured, but they were not the kind that attracted a reader because they were published so far away that a doctor had little if any familiarity and less sympathy with the authors of the papers. The present age furnishes a medical man with an abundance of interesting reading, and he has time to read productions from men of his own acquaintance. The busy doctor wants practical reading not too scientific nor too technical, but plain matter of fact recital of diseases and the most effective remedies to be employed in treating them.

It was a great advance taken by the North Dakota Medical Association, when it adopted a journal as its official organ, one near home and one that was engaged in presenting the papers from the several adjoining states. The JOURNAL-LANCET publishes all the medical news that is furnished and would gladly publish more if we could impress societies with the necessity of having doctors in a community send in all medical changes and appointments that take place within the state. True, this takes time, but there is in every component society some one or more persons who are news-gatherers and who delight to put these items in readable form if they were selected as reporters for their local society. Then, too, the published papers read at our annual meetings have had the most careful editorial attention, and corrections have been made by the publisher so that the subject matter is placed before the reader in the most readable form. Sometimes we may think that changes made mutilate the ideas expressed, but we ought to be good philosophers and take editorial pruning gracefully, so that our vague expressions are brought out plainly and distinctly to the reader.

We are accustomed to felicitate each other on an annual birthday, and wish the celebrant more and happier days as the years roll by. Certainly, I take it that the medical profession of North Dakota, without exception, will not fail to congratulate THE JOURNAL-LANCET on its fiftieth anniversary and bespeak for its future an even more useful and readable publication for those who are accustomed to read its pages, and we bespeak for those coming after us a greater degree of sympathetic support for the paper.

THE PIONEERS OF JAMESTOWN, N. D.

By JAMES A. RANKIN, M. D.
CARRINGTON, N. D.

Limiting my remarks to Jamestown, I found upon my arrival there, in February, 1885, ten representatives of the medical profession, as follows: Drs. Drake, Baldwin, Thorold, Knauf (now Wink), De Puy, Brotherlin, Van Dusen, Johnson, Fusenich and Mueller. Dr. Baldwin was the pioneer. All these were in a little town claiming a population of 3,500 and with a sparsely settled country. A few months sufficed to reduce the number to a more reasonable basis, as the last-named five removed to other fields.

The first building of the State Hospital for the Insane was completed during the summer of 1885, and then Dr. Archibald came as superintendent. He remained at the head of the institution until 1896, being succeeded by Dr. Moore, former assistant. Dr. Moore was succeeded by his assistant, Dr. Baldwin (now superintendent

of the University Hospital, Minneapolis), and he by Dr. Hotchkiss, the present incumbent.

In the town there were but few changes for some time, Drs. Drake and Thorold removing and Dr. Armstrong coming in 1896, later removing to Billings, Mont. Since then many changes have occurred. Dr. Siftan located there in 1899. Then came Drs. Golseth, Moore, Stribbling and Guest. Dr. Siftan removed to Oregon in December, 1908, and I left for the west in June, 1909. In 1909 and 1910, Drs. Gerish, Argt, Novius; Ward and Holt came, replacing removals and adding to the force. Dr. Stribbling remained but a short time. And Dr. Moore removed to Los Angeles, Calif., about 1911. Dr. Baldwin retired and removed to New York State a few years ago. So that of the original ten in 1885, only two, Drs. Wink and De Puy, remain.

THE VALUE OF MEDICAL JOURNALS

By F. W. McMANUS, M. D.
WILLISTON, N. D.

Noting that you are about to enter another year of service in the interests of the medical profession of the Northwest, I beg you to accept just a few words in appreciation of your worthy effort. While we may continue to deplore the fact that we, the State Medical Association of North Dakota, are not financially able to support a journal of our own, yet we have in THE JOURNAL-LANCET one that ably represents us, and we are correspondingly happy in that knowledge. It is a great pleasure to have a clean, wholesome sheet come to our desk every two weeks which we are not ashamed to peruse, and from every single issue of which we get full value for each year's subscription. It has conveyed many solutions of knotty problems to medical men who reside far from clinical centers and research laboratories, men who are trying to earn an honest livelihood and, at the same time, endeavoring to keep abreast of the advances in medicine and surgery. The pages of THE JOURNAL-LANCET have greatly assisted them in attaining their desires. This we believe to be the object of such a publication, and we congratulate you, gentlemen, upon your success.

We have read and we have heard criticisms,

and we have heard them discussed in open forum wherein very convincing language was used upon both sides, but, so far as we were able to ascertain, destructive criticism of THE JOURNAL-LANCET has always fallen, as error must always fall of necessity. The participants in these discussions are members of our State Association, honorable men, absolutely without mercenary motive or hope of personal aggrandizement in any manner whatsoever, all striving for higher standards in our medical literature, and we firmly believe we are attaining our ideals more and more each year. Honest criticism is a vitalizing stimulant to real progress.

When we read a medical journal published outside our territory, we read only such articles as appeal to us, for various reasons, but we read THE JOURNAL-LANCET *from cover to cover*. We know these men and we know their ideals, that they are good, clean, and wholesome. We know them to be men of open minds and untiring zeal in promoting our general welfare,—men who are always ready and willing to lend their assistance in untangling life's problems. These are the men we like—the men who are really worth while—the men who are so ably filling the medical needs

of the great Northwest—the men who have chosen THE JOURNAL-LANCET as their official organ from year to year. We have faith in their judgment.

We feel that we entertain a justifiable pride in the selection of our official organ. It represents no individual, no faction, no institution, no interests save those in whose interests it is published,—the physicians of the four greatest states in the Union. Through its medium we have been kept informed of all research work which has offered any promise of advancement, of its progress, and of the end-results, whether they become established as principles or discarded. Through its columns we have had advance notice of the new warfare against infection as practiced during the great war and were kept acquainted with its various phases until it became established as a principle of the science of surgery. Ten years ago, or thereabouts, we became acquainted with the physiologic action of pituitrin. Those of us who used it, at first had varying results,—mostly good, but occasionally harmful. Through the medical journals we learned to carefully co-ordinate dose, time, and patient, and it has become the obstetrician's most valuable aid, and of almost equal value to the patient, as well. The lay press heralded far and wide the wonders and benefits

of "Twilight Sleep" (a method which had been tried and found wanting at least twenty-five years previously in this country), but the really efficient medical journals, THE JOURNAL-LANCET among the rest, pointed out the dangers of this procedure, and it was laid aside as unsafe, positively dangerous, and unprofessional in practice save in the hands of expert and long-experienced practitioners. The same authorities have pointed to the dangers attendant upon the administration of the newer arsenic preparations in the hands of novices, and have taught us to use them intelligently, and also many, many others of the new products. We have missed certain advertisements from its pages from time to time, but the cause was not far to seek or hard to find. We have kept in touch with the professional brethren, of their uprisings and downittings, of their failings and achievements, of their troubles and doubts, of their gladsome days and their hours of sadness; and when they have ceased earthly activities, the world has been given due notice. What more could we ask? Here's to you, JOURNAL-LANCET! Long may you wave over the bones of your enemies; may their tribe grow less with the passage of years. Here's to you again, JOURNAL-LANCET! As you are for us, we are strong for you.

SOME APPRECIATIONS

FIFTY YEARS YOUNG

By H. L. STAPLES, M. D.

MINNEAPOLIS

My best wishes for the prosperity and success of THE JOURNAL-LANCET, now fifty years young.

My few articles in its pages have always been carefully edited, and I have always felt that they were in the journal representing genuinely the profession of the Northwest.

I trust during the next fifty years it will continue to occupy the same position of prominence.

ACCEPTABLE AS OFFICIAL ORGAN

By H. H. HEALY, M. D.

GRAND FORKS, N. D.

I am glad to congratulate the present management of THE JOURNAL-LANCET upon its half century mark and its splendid attainments.

THE JOURNAL-LANCET is a representative organ. We in North Dakota have the feeling that it is our journal.

It is now several years since we adopted THE LANCET as our official organ. At that time there was considerable opposition to the arrangement, but we have been treated so squarely that I believe we are now quite generally satisfied.

I hope THE JOURNAL-LANCET will continue to serve us for many years to come.

HAS A VIGOROUS PERSONALITY

By ARTHUR T. MANN, M. D.

MINNEAPOLIS

THE LANCET is to be congratulated at its fiftieth anniversary. It has had a vigorous personality and has exerted a constant, definite influence on the medical profession of the Northwest. During all these years it has been active in the upbuilding of a steadily increasing scientific spirit in as fine a body of men as can be found in any great section of the country. Insistently it has stood for pure English and for the clear expression of ideas. There is hardly a man in the profession who has not felt this, and certainly none of those

who have been its usual contributors. There is no one who has made a strong impression on the thought and ideals of the profession here who has not been glad to use its pages.

MAINTAINS HIGH STANDARDS

By GEORGE B. EUSTERMAN, M. D.

Clinical Section of the Mayo Clinic

ROCHESTER, MINN.

I take pleasure in having the opportunity to congratulate THE JOURNAL-LANCET on the occasion of the fiftieth anniversary of its existence. I have had the privilege of personally knowing those who, in more recent years, have been so instrumental in the success of this journal, which for so long a period was the official organ of the state association. It is almost needless to say that in my judgment it has been one of the best edited and best printed medical journals in the country, and I am glad to note that these high standards continue to be maintained. The medical profession of North and South Dakota is to be congratulated on having such an excellent medium of publication, which for so long and so well has served our own state profession.

Knowing very well that you will be highly instrumental as regards further progress in Northwest medicine, I wish you all success in the years to come.

THE INFLUENCE OF THE JOURNAL-LANCET

By JOHN W. BELL, M. D.

MINNEAPOLIS

My earliest knowledge of THE JOURNAL-LANCET dates back to April 1, 1881. The genial, lovable Dr. A. J. Stone was the editor, a brilliant and forceful writer, who was ably assisted by Dr. Wm. Davis, associate editor.

One cannot escape the conviction that the early high professional standards of the profession of the Northwest were due in a large measure to the existence of THE NORTHWESTERN LANCET. In 1887 the journal was strengthened by the addition of Mr. W. L. Klein, the present publisher.

The writer has not at all times been in accord with the policy of THE JOURNAL-LANCET, but at no time has there been occasion for a member of the profession to be in doubt as to the views of the journal on any important question.

In conclusion, permit me to say that THE JOURNAL-LANCET is second to no medical journal published in this country, as regards care

exercised in the preparation of the scientific articles appearing therein.

THREE MEDICAL FACTORS IN THE TWIN CITIES

By GEO. DOUGLAS HEAD, M. D.

MINNEAPOLIS

Three potent factors have contributed to establish within the Twin Cities a medical atmosphere worthy of the best traditions of our profession. First and foremost should be mentioned those pioneer physicians, most of whom have been gathered "to the fathers," whose sacrifice, teaching, and professional example have formulated for us the principles upon which our practice now rests. Second, the University Medical School, whose graduates form a large percentage of our medical practitioners, public health officials, and University medical teachers, whose influence in many avenues of work has been of the greatest assistance to the profession. While as the third powerful influence operating to mould the professional life and ideals of our Northwestern profession, should be placed that representative medical journal, THE JOURNAL-LANCET. Its fifty years of existence mark a real event in the history of medicine in our state. Its volumes represent faithfully the contributions of Northwestern physicians to the literature of our time. Its pages stand as a monument to the faithful and efficient services of a publisher extraordinarily well fitted for his work, and an editor whose fearless expression of his convictions merits the thanks of his fellow physicians.

FAITHFULLY REPRESENTED THE PROFESSION OF THE NORTHWEST

By J. WARREN LITTLE, M. D.

MINNEAPOLIS

Temporarily absent from home, I remember that the fiftieth anniversary of THE JOURNAL-LANCET is at hand, and I would feel remiss in my duty if I did not add a few words of encouragement concerning your publication.

Coming to Minneapolis almost thirty-seven years ago, having just graduated from the Jefferson Medical College of Philadelphia, I found in THE NORTHWESTERN LANCET a clean enterprising medical journal, edited by Dr. Alexander J. Stone, of St. Paul, then at the height of his professional career, a scholarly, genial and lovable

gentleman, always anxious to assist a young doctor to get started on his professional journey. I at once became a subscriber and reader of THE LANCET, as well as a too infrequent contributor.

THE JOURNAL-LANCET for half a century has faithfully represented the medical profession of the Northwest, and in my opinion it was never more ably managed and edited than at present.

Of Dr. W. A. Jones, Mr. W. L. Klein and Dr. Wm. Davis, the latter of St. Paul, I feel the medical profession of this section of the country may be justly proud.

Among the many contributors who have passed away, I can only name a few. The older men will remember with respect and affection, as I do, Dr. W. W. Mayo, Dr. Chas. A. Wheaton, Dr. Alexander J. Stone, Dr. James H. Dunn, and Dr. Max Vander Horck. Every one was a prince and a power in the profession.

I hope and expect THE JOURNAL-LANCET to continue its good work, a pleasure and profit to its promoters and a benefit to the entire medical profession.

THANKS FOR COURTESIES EXTENDED

By W. G. SMITH, M. D.

HETTINGER, N. D.

Today, in receiving my regular semimonthly medical message through THE JOURNAL-LANCET, I see on its front cover page "Established in 1870," which also reminds me that in 1920 you will have reached your fiftieth anniversary.

This to my mind should be a mile-post of gratification and a real red-letter day for the editorial staff and the publisher. As one of the readers of the LANCET for many years past, it is with great pleasure that I extend congratulations to the LANCET family. These messages, bringing to me, as it has for many years, the most recent advancement made by the medical profession, have helped to develop a preparedness for the many emergencies in the sick-room that develop in every physician's medical work.

THE LANCET has furnished the Northwest the best of medical literature, and has brought to every reader the best thoughts, not only of the Northwestern physicians, but the latest advancement in medical knowledge of the whole world.

THE LANCET is like unto the rails of steel which pioneered the Western prairies, developed the many barren spots into cities and towns, and started a Western onrush of population, and has also been the pioneer developer of the medical and surgical knowledge in the great Northwest,

As you look back over the past 50 years, you no doubt will recall many hard struggles and trials which only the greatest energy and perseverance have overcome; but you must surely know, the very great pleasure of success where so many have failed and have the still more appreciative thought that you have not only succeeded in a financial way, but, through your distribution of medical knowledge to your many readers, have brought happiness to many who suffered the pangs of sickness.

To your lot in life has fallen one of the noblest positions that can fall to any man or set of men, and the friendship of Northwestern physicians has been richly deserved by you. The good-will, friendship, and best wishes of all Northwestern medical men are with you, for we all appreciate your leadership in assisting us to keep abreast of the latest medical advancement by means of THE JOURNAL-LANCET.

Words cannot properly express to you the appreciation of your many courtesies and your ever open-hearted hospitality and efforts to make every medical man at home in your columns.

"A SMALL BOUQUET"

By DAVID OWEN THOMAS, M. D.

MINNEAPOLIS

I find it very fitting that your fiftieth anniversary should furnish me the occasion to present a small bouquet of appreciation, composed of flowers cultivated under more than twenty years' reading of THE JOURNAL-LANCET, and in the atmosphere of genial friendship and high estimation of the editor-in-chief.

I congratulate you on your vigor, alertness, and splendid achievements as you reach your golden anniversary, for they speak well for your normal blood-pressure and elastic neurons. It must be gratifying for you to contemplate the wide influence you have exerted during your long and successful career, and the high eminence you have attained in the esteem of an increasing number of friends and the leading medical journals of the country.

You have studied the needs of the profession in the Northwest, and have made your publication to fill the requirements with remarkable ability. I admire the live and refreshing manner with which you touch up matters of interest to the profession. There is never a dull sentence in your paragraphs. All your departments show discriminating and pleasing accurate editing, indicative of a very efficient office management.

Your established and favorable acquaintance with the leading men of the profession has successfully secured able and helpful articles continuously, and made THE JOURNAL-LANCET a reliable exponent of the medical progress of our time. Many of the contributions would be an honor to the best medical journals of any land. You have constantly covered a wide field and ever aimed to assist the general practitioner to get an intelligent insight into the doings of all the departments of medicine.

While all your departments deserve felicitation, I would be amiss if I failed to mention especially one unique feature of THE JOURNAL-LANCET, namely, the comprehension, soundness, and pungency of your editorial columns. You not only clarify scientific subjects, but also safeguard medical ethics, and courageously expose medical frauds and commercial fads. You have watched the doctor's interests, and have been a pioneer in advocating medical reforms and ethical enforcement by legislation.

You have been outspoken in facing the vital medical problems that have arisen, and never dodged the issue; and thus many times have guided the medical man to determine the right attitude; and it is gratifying to assure you, to the extent of my observation, that your position invariably has been fair and well-taken, and finally endorsed by the profession. I do not recall a single exception, and that is a tribute of character that any medical journal can be proud of.

In addition to the scientific and clinical features, your personal column filled with the doings and goings of our medical friends is always full and very interesting, and altogether make THE JOURNAL-LANCET a medium of scientific medical practice, professional news, and social information very essential to the practitioners of the Northwest.

I wish you a bright future and the continuation of your usefulness, prosperity, and high standard.

REPORTS OF SOCIETIES

PROGRAM OF THE ANNUAL MEETING OF THE NORTH DAKOTA STATE MEDICAL ASSOCIATION

TUESDAY, JUNE 15, 1920, 9:30 A. M.

Invocation—Rev. D. J. Gallagher, Minot
Address of Welcome—President, Minot Association of
Commerce
Response—Dr. Charles MacLachlan, New Rockford
President's Address—Dr. W. P. Baldwin, Casselton

PAPERS

Head Injuries—Dr. Henry A. Beaudoux, Minneapolis
(Discussion opened by Dr. G. Golseth, Jamestown)
Etiology of Chronic Headaches—Dr. F. A. Brugman,
Minot
(Discussion opened by Dr. John H. Rindlaub, Fargo)

TUESDAY, 2:00 P. M.

Diagnosis and Prognosis—Dr. W. H. Bodensstab, Bismarck
Laboratory Methods for the General Practitioner—Dr.
Blake Lanchester, Wahpeton.
Discrepancies in the Wassermann Reaction—Dr. E. H.
Ruediger, Bismarck
(Discussion opened by Dr. Geo. A. Carpenter, Fargo,
and Dr. R. H. Beek, Lakota)
Treatment of Tumors of the Head and Neck with

Radium (Lantern slide demonstration)—Dr. Gordon S. New, Rochester, Minn.
(Discussion opened by Dr. H. H. Healy, Grand Forks)
Clinical Report (with lantern slides) of a Case of
Hemorrhage of the Pons Varolii and Medulla Oblongata—Dr. Geo. M. Williamson, Grand Forks
(Discussion opened by Dr. Fred Ewing, Kenmare)
Appendicitis in Children—Dr. F. W. MacManus,
Bashaw, Alberta
(Discussion opened by Dr. Frank E. Wheelon, Minot)
Ride around Minot's parks at 5 p. m.
Dinner-Dance at 7 p. m., Association of Commerce
rooms

WEDNESDAY, JUNE 16, 1920

The Rational Interpretation of Murmurs of Cardiac
Rhythm (with lantern slides)—Dr. Chas. Lyman
Greene, St. Paul, Minn.
(Discussion opened by Dr. E. A. Pray, Valley City)
Clinical Aspects of Pulmonary Tuberculosis—Dr. J. O.
Arnson, Bismarck
(Discussion opened by Dr. J. G. Lamont, Dunseith)
The Defense of Malpractice Suits—Mr. R. H. Bosard,
Minot, N. D.

WEDNESDAY AFTERNOON, 2 P. M.

Varicocele of the Broad Ligament—Dr. W. F. Sihler,
Devils Lake, N. D.
(Discussion opened by Dr. O. W. McClusky, Carrington)
Pyloric and Duodenal Ulcers—Dr. C. W. Schoregge,
Bismarck
(Discussion opened by Dr. W. A. Gerrish, Jamestown)

**THE
JOURNAL-LANCET**

Represents the Medical Profession of
Minnesota, North Dakota, South Dakota and Montana
The Official Journal of the
North Dakota and South Dakota State Medical Associations

W. A. JONES, M. D., *Editor*

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H. J. ROWE, M. D. - - - - - Lisbon, N. D.

W. L. KLEIN, *Publisher*

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JUNE 1, 1920

FROM THE EDITOR'S VIEWPOINT

The editor feels no small personal pride in being able to assist in the celebration of the fiftieth birthday of THE JOURNAL-LANCET, and he wishes to present his personal thanks to the founders of the paper and to its former editorial staff. The history which surrounds the inception of the paper is fully described herein by Dr. Davis, who has been directly or indirectly associated with it longer than any other person.

The editor also wishes to express his keenest appreciation to the publisher, Mr. W. L. Klein, with whom he has been associated for the past nineteen years. If two men can live in amity and harmony for that period of time and conduct a medical journal, it certainly is a good omen and shows that two persons of different temperaments can work together, even in matters medical, without neurological and psychiatric outbursts. Very naturally, there has been much discussion between the publisher and the editor in regard to different matters, but somehow all of those matters have worked out as they should without any serious trouble in the relationship of the two men. At all events, the editor desires to express his fullest sympathy for Mr. Klein in his work. He, perhaps more than anyone else, knows the trying experiences that the publisher goes through in his contact with men of all types, in business matters of various kinds, and in periods of financial stress and strain.

Both of us look back upon our association with

the Minnesota and two Dakota State Medical Associations with great pleasure, for, during that period, we met many fine men who have always been in full sympathy with our work.

The editor further believes that Mr. Klein presents to his readers a journal that is not only artistically and typographically one of the best published in the United States, but is unexcelled in its helpfulness to contributors in the editing of their copy. It has had a good influence on the medical profession for many years and has become quite indispensable to the profession in the Northwest.

The editor also wishes to express his thanks and appreciation to the men who have contributed articles to THE JOURNAL-LANCET during his editorship. This kind of intercourse is one which makes friends, and the writer believes that many friends have been made for our paper and its editorial staff. Consequently, he appeals to the readers of THE JOURNAL-LANCET and to the writers for it for their continued friendship and support. They have helped to bring this paper to its jubilee celebration, and perhaps the paper has helped them.

Quite on the side and confidentially, the editor not infrequently has had a hard time in attempting to write his editorials. He has tried to write on topics that were of general interest, rather than on scientific subjects, because he feels he is not especially fitted for so technical a position. A further fact is admitted that sometimes editorials were written in the heat of indignation, without proper forethought. But, somehow, these editorials did not all reach the eyes of our readers, and they still repose in the editor's desk, whence, after a few days or a few weeks, they were taken out, glanced over and pushed back into oblivion, although at the time of their writing the editor had a great deal of admiration for them. This same man also often says some very uncomplimentary things, perhaps is too critical, scolds much and preaches not a little, all of which he hopes has been kindly and generously overlooked, because the duties of an editor are not always the simple things that the reader thinks them to be.

It not infrequently occurs that an editorial subject or an editorial idea is given birth by the application of mental forceps—that is to say, they have been dragged out by hard pulling rather than by the easy method of delivery. At other times the editorials have come to the surface very lightly, and some of them, the editor vainly thinks, have been the result of youthful

enthusiasm. He offers no apology for many of his screeds, as they undoubtedly have been termed by some, but he has simply done what he could to make the pages of *THE JOURNAL-LANCET* interesting to its readers. Some of his writings have been widely copied and some have appeared in the daily press, and he very truthfully confesses that it has not hurt his feelings a particle, neither does it hurt any other man's feelings to have the daily papers copy his expressions, although he may sometimes subscribe to the opposite view. As a matter of fact, the average medical man does not object to seeing his name in print, whether in the medical or the lay press.

Sometimes the editor is more or less sarcastic; sometimes he tries to be entertaining; sometimes he tries to be amusing, but all of this is simply a little by-play and serves to depict his mood at the time of writing. Consequently, when he is sarcastic, forgive his irritability, because he may be laboring under a nervous strain. When he attempts to be entertaining, he doubtless falls short of his efforts; but when he attempts to be amusing, the Lord help him!

If there is one thing above another that the editor enjoys it is a fight, provided the fight is a just one—on his part—and the fighters are both good losers. Otherwise, there is no sport in the game at all. Not infrequently doctors squabble, jump at one another, and make unkind remarks, but, somehow or other, in the end they are all back to the same standard of brotherhood, jealous of their profession, jealous of their calling, and anxious to keep in one another's good graces.

And now, if you will bear with him for another period, the editor will hope to make *THE LANCET* better in the next fifty years than it has ever been before, because it has been said that men sometimes do their best work after 50, and why should not *THE LANCET* be included in this middle-age era?

W. A. JONES.

THE JOURNAL-LANCET'S FIFTIETH BIRTHDAY

In June, 1870, Dr. Alex. J. Stone, then of Stillwater, published the first number of *THE NORTHWESTERN MEDICAL AND SURGICAL JOURNAL*, a monthly of twenty-four pages. In July, 1872, the paper passed into the hands of Dr. H. H. Kimball, of Minneapolis, and Dr. H. C. Hand, of St. Paul, who continued it until May, 1874, when publication was suspended. This was the beginning of medical journalism in Min-

nesota, and nothing more was attempted until October, 1881, when Dr. Jay Owens, of St. Paul, began the publication of *THE NORTHWESTERN LANCET*, a semi-monthly of eight pages. In November, 1884, *THE LANCET* passed into the hands of Dr. C. B. Witherle, of St. Paul, who, in turn, surrendered it, in September, 1886, to Dr. Stone, then of St. Paul, who became again the proprietor of the only medical journal published in Minnesota. On December 1, 1887, Mr. W. L. Klein took the paper in hand as publisher, greatly enlarging and improving it. From October, 1886, to December, 1899, the writer was the active editor of *THE LANCET* in association with Dr. Stone. During the year 1900, Dr. Howard Lankester, of St. Paul, was the associate editor. In January, 1901, Dr. W. A. Jones, of Minneapolis, became editor as he is today.

So much for history, which shows how *THE JOURNAL-LANCET* came into being, and how, although only in its fortieth volume, according to the cover, it has really completed its fiftieth year. Ownership of both journals by Dr. Stone forms the connecting link between the two publications, and there is left only the gap between 1874 and 1880 when no medical journal was published in this state.

THE JOURNAL-LANCET is distinctly a local medical journal. The place filled by the local journal is quite different from that of the big weeklies, monthlies, and quarterlies, but is none the less important. Its mission is to provide a place where the medical men of a community can put on record their interesting cases, can publish the papers they read and the things they say at medical meetings, can voice their sentiments about current medical topics in the form of letters, and can read items of news about local medical matters. But for the easy access to its friendly columns many a valuable addition to medical knowledge would be lost to the world, for the modest writer who does not hesitate to contribute to his local paper, is often unable to persuade himself that what he has to say is worth sending to one of the metropolitan journals, whose contributions, for the most part, come from writers of renown in the medical world.

But the editor of a local medical journal knows well that its influence is by no means limited to the neighborhood in which it is published. Some of its original contributions are read in every quarter of the globe. As an example from *THE JOURNAL-LANCET* take a paper by Dr. D. W. Hand on "An Epidemic of Goiter,"

in the issue of November 15, 1885, in which it was told how forty-four out of one hundred and forty boys in the State Reform School had developed goiter. The uncommon rarity of an acute epidemic of goiter in boys caused this paper to be published in abstract or commented upon in many medical journals, both in this country and abroad. Wide publicity was given also to a paper by Dr. Arthur Sweeney, in the issue of July 1, 1897, giving an account of six cases of rabies in man coming under Dr. Sweeney's personal observation, an almost unparalleled record, while an editorial entitled "Is Inebriety a Disease?" that appeared on November 15, 1889, was republished in pamphlet form, translated into several foreign languages, and used as propaganda for the claim that drunkenness is a disease rather than a vice.

The limits of this article forbid a complete review of the progress of medicine during the lifetime of this journal. There is no question that these fifty years have seen far greater advancement in the art and science than was ever made in any one hundred years before. A man all of whose medical knowledge was acquired before 1870 would be lost should he try to practice medicine today, with no acquaintance with bacteriology in all its far-reaching influences, or with the revelations of the improved microscope and of the *x*-ray. Think of medical practice where there was no such disease as appendicitis, no serum or vaccine in use except that against smallpox. Think, if you can, of surgery and obstetrics without asepsis.

It is interesting to look over early issues of the journal and to read some of the first contributions made to medical literature by local men, who since have become known, not only in the Northwest, but in the entire Nation as well. Indeed, some men of world-wide reputation published their first medical papers in these columns. In *THE LANCET* of May 1, 1888, is a case report written jointly by Drs. W. W. and W. J. Mayo, the latter not yet five years in practice, and in the issue of August 15, 1890, is a paper by Dr. C. H. Mayo, who had graduated in medicine only two years before; perhaps even then they were dreaming of the great clinic in Rochester that was to make Minnesota the Mecca of medical pilgrims from every land.

WILLIAM DAVIS.

WORDS FROM THE PUBLISHER

It would be foolish to assert that *THE JOURNAL-LANCET* is now, or ever has been, or, perhaps, ever will be, a *great* medical journal; but it would be even more foolish to deny that it has been a very useful paper with large influence upon the development of the medical profession of the Northwest, a profession unexcelled, if not unequalled, by any like group of men in any other section of the United States.

To have taken even a small part in the maintenance and development of such a journal is just cause for pride; therefore I consciously share in that pride to such a degree that I feel on this anniversary day large compensation for my services, as publisher and practically as managing editor for over thirty-two years, to the cause for which *THE LANCET* stands, namely, the betterment of conditions tending to the extension of human life and the enlargement of human happiness. I also rejoice in the friendships made, in the kind words spoken, privately and publicly, concerning my work, and, especially, in the total absence of friction among those engaged in making *THE LANCET*.

In my backward look over almost a third of a century on *THE LANCET* I see a large group of grand men who were active supporters of the paper; but I see only three who shared the burdens of the work:

I think of Dr. Alex. J. Stone, not so much as an editor, for such he was only in name, but as a prince of men, willing to own *THE LANCET*, and yet to give its entire direction, with all praise arising therefrom, to others, holding control simply to see that the paper served his beloved profession. This sentiment was carried by him to such an extent that I was unable to force upon him just compensation for the assets (accounts receivable) of the paper when I assumed its business management.

I think of Dr. William Davis' work on the paper as a continuous service to the medical profession, at times amounting to a sacrifice, for a period of over thirty-three years, or one year longer than my own service. For fifteen years of this long period Dr. Davis did all the editorial work of the paper, and for the remainder he read practically all the proof, his reading of proof amounting to a second editing of the articles submitted for publication. This arduous work covering the long period named has been done almost wholly without compensation and practically unknown to the profession, even to

Dr. Davis' intimate friends. I think I can say without the least exaggeration that this service to the medical profession of the Northwest, in its last analysis of value, is greater than the service rendered by any other medical man in this field during the past half century.

I think of Dr. Jones as one making great sacrifice to do his part well, for his private practice is so pressing that his editorial work is practically always rendered burdensome, and yet it has been done regularly and faithfully for the past nineteen years.

To these two men the profession owes a debt of profound gratitude.

A word of hearty appreciation is due others for work done in a special capacity. As associate editors representing their respective states, Dr. R. D. Alway, for many years the secretary of the South Dakota State Medical Association; Dr. F. A. Spafford, the present secretary of such association; and Dr. H. J. Rowe, the long-time secretary of the North Dakota Association, have contributed genuine service both to the paper and their associations.

Since the above was put into type a letter has been received by us from Dr. F. A. Spafford, secretary of the South Dakota State Medical Association, in which he notifies us of the renewal of the contract between THE JOURNAL-LANCET and the Association, and at an increased price for subscription. We take the liberty of printing the following paragraph from Dr. Spafford's letter:

"I wish to inform you that both the House of Delegates and the Councilors were very complimentary in their remarks in regard to the fine appearance of THE JOURNAL-LANCET, and were very appreciative of the kindly relations which have existed between us in the past."

W. L. KLEIN.

TO OUR LONG-TIME FRIENDS—OUR ADVERTISERS

The publisher, on behalf of the editors and friends of THE JOURNAL-LANCET, extends hearty thanks to the many advertisers who have contributed so large a part of the income that made possible its publication and its high standard of typographical excellence. Our special thanks are due and are cheerfully extended to the following firms whose announcements have appeared in our pages almost a third of a century, some

of them before the publisher began his work on the paper:

ELI LILLY AND COMPANY, Indianapolis.
FAIRCHILD BROS. & FOSTER, New York City.
FELLOWS MEDICAL MFG. CO., New York City.
NOYES BROS. & CUTLER, St. Paul.
PARKE, DAVIS & COMPANY, Detroit.
REED & CARNRICK, New York.

MISCELLANY

DISCHARGED DISABLED SOLDIERS AND THE PUBLIC HEALTH SERVICE

In order to obtain specific information as to the hospital care afforded discharged disabled soldiers by the Public Health Service, Dr. A. W. Abbott, of Minneapolis, addressed a letter to the Public Health Service of Minnesota, and as this information answers like questions arising in other states we give the answer received by Dr. Abbott from the Department:

Dr. A. W. Abbott,
Abbott Hospital,
Minneapolis, Minnesota.

My dear Dr. Abbott:

In accordance with your request of today I will endeavor to outline, as nearly as possible, the treatment afforded discharged disabled soldiers by the Public Health Service.

You doubtless know that the first thing necessary in order that a man may receive treatment or hospitalization from the Public Health Service is that the disease or disability from which the man is suffering is traceable to the service. This point being established, the man becomes eligible for all necessary treatment and hospital care by the Public Health Service. Before such treatment can be secured, however, excepting in cases where it can be considered an emergency case, the man should apply for compensation, providing he has not already done so. As soon as a claim for compensation is filled out the Public Health Service are in position to do whatever is necessary for the man.

All cases requiring operations for any disease or wound are performed at St. Mary's Hospital, this city, while all cases requiring medical attention only are taken care of at St. Mary's Hospital, Asbury Hospital, Fairview, and Eitel. Tubercular cases are placed only at Thomas Hospital, when the tuberculosis has reached the last stages, or while a man is awaiting an opening in one of the numerous sanatoriums throughout the state. Formerly, all the tuberculosis patients were sent to Walker, Minnesota. They are rapidly changing this arrangement and are sending numerous cases to the Oronoco Sanatorium at Rochester, Minnesota. They are also sending them to private sanatoriums at Granite Falls, Pine City, and different towns throughout the northern part of Minnesota.

Numbers of the cases require no hospital treatment at all. These men report directly to a physician assigned

them by the Public Health Service for their treatment, having the necessary medicine and equipment furnished them free of charge. These men are cared for by these physicians until they are either cured or until their condition necessitates hospitalization.

Extreme cases of nervous trouble are being taken care of at the U. S. Public Health Service Sanatorium at Waukesha, Wisconsin. I believe there are one or two other institutions which the Public Health Service expect to use for this particular work in the near future. When a nervous case develops into a mental case, the men are usually sent to the Hospital for the Insane, Rochester, Minnesota.

The Public Health Service headquarters are at the present time located at the Lowry Building, St. Paul, Minnesota, having a Minneapolis office at Room M, Lobby Floor, Metropolitan Life Building. They have free doctors at their office who examine the men and refer them, if necessary, to the staff of specialists in Minneapolis, there being a specialist provided for each particular class of trouble.

It is extremely hard to outline the exact work which they do, since their work is so far-reaching and embraces so many different types of cases. However, if all doctors in Minneapolis would refer all cases of discharged soldiers who are in need of medical attention, where there is reason to believe the man's disability is traceable to the Army service, either to this office or to the office of the Public Health Service, I feel that we could handle the situation in Minneapolis in a satisfactory manner. In cases where an emergency call is needed when the office of the Public Health Service or the American Red Cross is closed, I would suggest that the doctor make the visit as requested, doing whatever is necessary in the emergency and notifying either of the offices the following morning, so that it might be taken care of from that particular point.

If there is anything further which I can give you that will be of service to you, I trust you will feel free to call upon me at any time.

(Signed) RALPH A. MARSH,
Secretary, Department of Discharged Men.

NEWS ITEMS

Dr. Horace Clark has moved from Burlington, N. D., to Wheatland, N. D.

Dr. N. H. Gillespie, of Duluth, has gone to New York for postgraduate work.

Dr. Harvey Bacharach, of Minneapolis, died at San Diego, Calif., last month, at the age of 55.

Dr. John M. Conroy, of Duluth, was married last month to Miss Bernice Bradstad, of the same city.

Dr. Frank Gunn, who has been doing government work for some time, has located in Baudette.

Dr. Arthur J. Henderson, of Kiester, was married last month to Miss Hazel Olson, of Estherville, Iowa.

Dr. D. R. Campbell, of Bagley, was married last month to Miss Emma Thompson, of the same place.

Dr. G. W. Davis, of Duluth, has retired from active practice. He has practiced in Duluth for thirty-eight years.

Dr. William Friesleben, of Sauk Rapids, has been appointed coroner of Benton County to fill a vacancy in that office.

Dr. A. M. Fisher has resumed practice at Bismarck, N. D., after an absence of over two years in medical war service.

Dr. H. J. Huene, of Forsyth, Mont., spent the winter in Chicago doing postgraduate work in surgery and x-ray work.

Dr. O. S. Watkins has returned to Carlton, Minn., from Billings, Mont., and will resume his practice for the summer.

Dr. C. L. Colby has moved from Minneapolis to St. Paul and has become associated with Dr. T. L. Birnberg of the latter city.

Dr. H. M. Guilford, former Health Officer of Minneapolis, was married last month to Miss Irene Garrett, also of Minneapolis.

Dr. M. A. Desmond, who formerly practiced in Glenwood, has located in Crosby and become associated with Dr. F. A. Allen of that city.

The tentative program of the annual meeting of the North Dakota State Medical Association, to be held on June 15 and 16, appears in another column.

Dr. A. E. Chamberlain, of Belt, Mont., died last month at the age of 60. Dr. Chamberlain had practiced thirty years in Belt, and was greatly honored.

Dr. E. L. Tuohy, of Duluth, read his thesis before the Minnesota Academy of Medicine last month. The paper was entitled "Chest Conditions Associated with Aortic Diseases."

Dr. Paul F. Brown, of Minneapolis, has received the Distinguished Service Cross for rescuing fourteen wounded men left in front of the lines in the battle of the Argonne in France.

Dr. E. Wells, of Stillwater, died last month from pneumonia. Dr. Wells was county physician of Washington County at the time of his death, and had been a member of the city council.

In our last issue we announced that Dr. "T. E." Jones had located at Valley Springs, S. D. It was Dr. E. A. D. Jones. Dr. T. E. Jones is located at Sioux Falls with no thought of removal.

Dr. J. R. Manley, medical inspector of the health department of Duluth, has resigned and will do postgraduate work in New York. Dr. C. W. Taylor has been appointed to fill the vacancy in the health department.

Dr. Alex Stewart, of Duluth, will spend some time in postgraduate work in the East. During Dr. Stewart's absence, Dr. G. C. Gilbert, who recently moved to Duluth from the Cuyuna Range, will have charge of his practice.

The Wabasha County physicians have changed their fee bill as it relates to mileage. The new rate is \$1.50 per mile one way when an auto can be used; and when the roads are impassable for an auto the cost of horse livery is added.

"Camp Rosenwald" will be the name of the camp at Fort Snelling next week, when the Minnesota National Guard holds its annual encampment. The name is given in honor of Lieut. Rosenwald, of Minneapolis, who was killed in France.

At its last meeting the Alpha Omega Alpha honorary medical fraternity of the medical school of the University of Minnesota elected members from the senior class as follows: W. G. Benjamin, W. F. Cantweel, W. W. Denny (deceased), Frances Ford, L. H. Fowler, C. G. Gault, F. C. Kinsman, H. J. Moersch, J. L. Mills, M. E. Ryan, W. F. Widen, and G. G. Zanger.

The teaching of handicrafts as a therapeutic measure is to be introduced into the Minneapolis General Hospital under the supervision of Miss Corinne Odell, a member of the staff of the Hennepin County Tuberculosis Association. Miss Odell supervises this work at Hopewell, Minneapolis' tuberculosis hospital, where it was introduced by the Tuberculosis Association.

The Modern Hospital, of Chicago, has moved into a large handsome three-story building, formerly a fashionable residence, at 22-24 East Ontario Street, which will also be the national headquarters of the American Hospital Association and the home of *Modern Medicine*, and the Modern Hospital Year Book. Near at hand are the American College of Surgeons and the American Medical Association.

A staff has been organized by the visiting physicians and surgeons of Fairview Hospital, of Minneapolis, at the hospital. The officers elected for the year are: Dr. H. L. Williams, president; Dr. Oscar Owre, vice-president; and Dr. F. J. Souba, secretary-treasurer. Meetings of the staff will be held on the evening of the first

Wednesday of each month at the hospital. A program, consisting of papers and clinical case-reports, will be a part of each meeting. The first regular meeting was held on May 5th, at the hospital.

The Minnesota State Homeopathic Society held its fifty-fourth annual meeting in Minneapolis on May 18 and 19. The program was divided into the following heads: "Bureau of Obstetrics," "Bureau of Medicine," "Bureau of Pediatrics," "Clinical Day," "Bureau of Eye, Ear, Nose and Throat," and "Bureau of Surgery and Gynecology."

Dr. W. J. Mayo, of Rochester, addressed the students and the faculty of the State University and some guests last week on the medical men of South America. He paid a high tribute to the character and ability of the South American profession, whose members are perhaps more frequent visitors to the clinics of Europe than our own medical men. Dr. J. Frank Corbett, president of the Hennepin County Medical Society, acted as toastmaster at the luncheon given by the Medical Six o'Clock Club, which invited Dr. Mayo to make this address.

The midsummer meeting of the Southern Minnesota Medical Association will be held at Fairmont on June 28th and 29th. The program is an elaborate one and consists of fifteen papers, all of which will be discussed by men of note in the state. The men outside of Minnesota whose names appear upon the program are: Capt. Vandervelt, of La Panne, Belgium; Dr. C. P. Howard, Iowa City, Iowa; and Dr. Lewis W. Bremermann, of Chicago. The guests and members of the Association will be handsomely entertained by the citizens of Fairmont. We hope to find room for the complete program in our next issue.

The South Dakota State Medical Association held its thirty-ninth annual meeting in Sioux Falls on the 19th and 20th of last month with an attendance of 134, as compared with only 85 the previous year. The meeting was considered the best and most profitable in the history of the Association. The following men out of South Dakota read papers: Mr. H. A. Whittaker, of the Minnesota State Board of Health; Drs. A. W. Adson and J. H. Stokes, of the Mayo Clinic, Rochester; and Dr. H. M. Bracken, of Minneapolis. THE JOURNAL-LANCET was readopted as the official organ of the Association at an increased subscription price. The following officers were elected: President, Dr. H. T. Ken-

ney, Pierre; first vicepresident, Dr. G. S. Adams, Yankton; second vicepresident, Dr. G. G. Cottom, Sioux Falls; secretary-treasurer, Dr. F. A. Spafford, Flandreau. The next meeting will be held at Aberdeen.

Dr. Richard Olding Beard, of the University of Minnesota, was called to Cleveland to deliver the Commencement address for the School of Nursing of Lakeside Hospital on May 26th. The particular interest attaching to the occasion is its coincidence with a proposal to put the school under the control, to make it, in fact, a teaching department, of the Western Reserve University. It was Dr. Beard who promoted and framed the organization of the School of Nursing of the University of Minnesota eleven years ago,—the first university school of the kind established anywhere in the world. He has been the chairman of the committee in direct charge of the school throughout its lifetime and has become a recognized authority on nursing education. The example of Minnesota has been followed by the Universities of California, Indiana, and Cincinnati. A similar association is hoped for in Ohio.

HIGH-GRADE X-RAY TECHNICIAN WANTED

A firm of physicians and surgeons in Montana will give permanent employment at good wages to a high-grade x-ray technician. Address 345, care of this office.

MINNEAPOLIS SANITARIUM FOR SALE

The prettiest and best-paying sanitarium in the Northwest is offered for sale for the best of reasons. Telephone Hyland 0152 or call at the Sanitarium, corner Plymouth and Penn Aves., Minneapolis.

LOCATION OR POSITION WANTED

A graduate of an A-1 school who spent two years in service abroad, mostly in surgical work, desires a partnership or a good location. Speaks German and can give the best of references. Address 347, care of this office.

POSITION IN DENTIST'S OR DOCTOR'S OFFICE WANTED

By young woman who has been in a dentist's office two years. Can give gas anesthesia and assist in operations, and can do dental x-ray work. Best of references. Address 346, care of this office.

LOCATION WANTED

Location wanted in town having hospital facilities by experienced man doing general practice and major surgery. Wish business running from \$8,444 up per year with good collections. Reasonable investment made. Address 336, care of this office.

X-RAY AND CLINICAL LABORATORY TECHNICIAN WANTS POSITION

For part or whole time in hospital or office in Twin Cities. Can give highest of references. Address 339, care of this office.

LOCATION OR AFFILIATION WANTED

A young physician with considerable surgical experience, who has spent the past year since leaving war service in a surgical hospital, seeks an affiliation with a good man in the country or will buy a country practice. Address 350, care of this office.

OFFICE POSITION WANTED

A girl of excellent address and cheerful disposition, willing to work, desires a position in a physician's or dentist's office. Has had some experience in an oral surgeon's office, assisting and doing general office work. Address 351, care of this office.

BOOKS AND ELECTRICAL APPARATUS FOR SALE

I offer for sale my late husband's books (about 200 vols.), sectional bookcases (12 sections), and a complete Campbell chair and Model "E" X-ray High Frequency Coil with accessories. For full particulars call on Mrs. Ida Blomburgh, 1910 Columbus Ave., Minneapolis (Telephone, Automatic 51 651).

GOOD LOCATION FOR A PHYSICIAN

A new modern office in a fine and rapidly growing residence district of St. Paul can be had for \$15.00 a month. Two or three colleges are near at hand, and physicians in this district find many patients in the nearby and fine commercial district. Address 719 North Hamline, St. Paul, or telephone N. W. Midway 0173.

POSITION AS OFFICE GIRL AND ANESTHETIST WANTED

By a young woman who is a graduate nurse and has had excellent experience with a high-grade surgeon in administering anesthetics. Can do typewriting, keep books, etc. Best of references. Address 342, care of this office.

NURSES SUPPLIED

for hourly nursing in the city and for institutional and office positions anywhere by The Third District Registry (formerly The Hennepin County Registry) of State Registered Nurses. Telephone or telegraphic calls answered at all hours, day or night. Telephones: N. W., Main 2558; Dial, 32 558. Registrars: Anna E. Jansson and Anna Westley, 679-681 Curtis Hotel, Minneapolis.

A MINNEAPOLIS SANITARIUM FOR SALE

The neatest and best located sanitarium in Minneapolis is offered for sale, as other interests compel the owner to leave the city. Anyone looking for a good proposition should see this. Reasonable terms will be made. Bake oven in connection. For further information address 338, care of this office, or telephone N. W., South 3423.

OFFICE POSITION WANTED

By a young woman (aged 24), who has had several years' experience in a medical and surgical supply house, and is thoroughly qualified to do office and secretarial work. Can keep books and use the dictaphone and typewriter. Best of references will be given. Address 344, care of this office.

Why don't you send your instruments to us for repair and sharpening? It will make your work easier. F. Buchstein Co., 111-113 South Sixth St., Minneapolis. Established 1894.

The thought behind
the tube—
"the patient on the table"



Not "good enough" but the best from every standpoint—
alone assures that degree of "Catgut Safety" demanded when
the patient on the table is "ONE OF MY OWN FAMILY!"

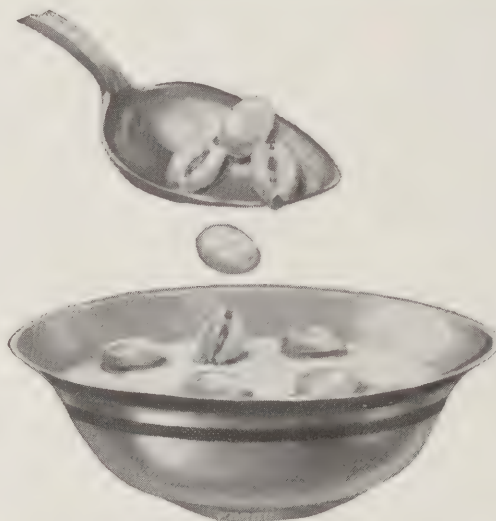
Only on this peculiarly personal basis is

"Van Horn" Catgut

supplied to the profession.

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NEW BRUNSWICK, N.J.



No Unbroken Food Cells

Steam-Exploded Wheat

Here is whole wheat, fitted, as never before, for easy, complete digestion.

The grains are steam-exploded—shot from guns. They get an hour of fearful heat—550 degrees. The moisture in each food cell is thus changed to steam.

When the guns are shot, that steam explodes. Each of the 125 million food cells is exploded separately. Thus every granule of the whole wheat is fitted to easily digest.

Ordinary cooking breaks but part of the food cells. This method breaks them all.

Puffed Rice is whole rice puffed in like way. Corn Puffs are pellets of hominy puffed.

Where ease of digestion must be considered, these are the ideal grain foods. They are also the most delightful grain foods that anyone ever tasted.

The Quaker Oats Company

Chicago

Puffed Wheat

Puffed Rice

Corn Puffs

PUBLISHER'S DEPARTMENT

ATOPHAN—A CORRECTION IN PRICE

In a recent issue we attempted to quote the reduced prices for Atophan, which is manufactured by Schering & Glatz, Inc., and our statement was subject to two interpretations, one of which was incorrect.

The retail prices of this extensively used preparation were reduced on April 1 and are now \$1.15 per box of twenty (7½ gr.) tablets and \$3.00 per ounce carton for the powder.

Reductions of this kind are welcome.

TAKAMINE LABORATORY, INC.

This laboratory is noted for the scientific nature of its work, being excelled, in this respect, by no other laboratory in the world. Its specialists are Arsphenamine ("606"); Neo-Arsphenamine ("914"); Quinine (tasteless quinine, devoid of the effect of cinchonism); and Hirathiol (ammonii sulpho-ichthyolicum), used by the Government since 1917.

These preparations are very largely used by the profession everywhere, and may be had from the distributing agents of the laboratory or, in case of necessity, direct from the Takamine Laboratory, 12 Dutch St., New York City.

NEW BOOKS—EDWARD J. KIMBALL

Dr. Edward J. Kimball, of Minneapolis (827½ Nicollet Ave.), endeavors to place before or obtain for physicians the best obtainable books of a general or special kind, and he keeps thoroughly posted on the books that are of real service to both the special and the general practitioner. He gathers information about books from men who know them and are capable of passing judgment on them. An adviser of this kind is of the highest value to every professional man.

Dr. Kimball is now offering a special list of a dozen high-grade books in various lines, every one of which is worth having.

Read Dr. Kimball's card on another page of this issue.

THE SHERMAN LABORATORIES

Dr. G. H. Sherman, of Detroit, Mich., is both a leading writer and manufacturer of bacterial vaccines; and the products of his laboratories have a recognized and high standing in the medical profession. The laboratory's output of such vaccines is a large and ever-increasing one, new work being done all the time.

For convenience many of the standard vaccines manufactured by Dr. Sherman are numbered; and at present he calls special attention to Sherman's No. 38, which is made to protect patients against colds, influenza, and pneumonia. Dr. Sherman will be pleased to send his literature to any physician, or to correspond with anyone interested. Address Dr. G. H. Sherman, Detroit, Mich.

METABOLISM STUDIES BY MAIL

For satisfactory metabolism studies of the blood it has been necessary heretofore for the patient to report at the laboratory, where, immediately upon obtaining the specimen, the analysis was begun. Recent research work has developed a technic which makes it prac-

tical for the family physician to collect the sample and forward it to the laboratory for diagnosis.

Regardless of the distance you may be from the Twin Cities, the Minneapolis Diagnostic Institute can furnish directions for collecting and forwarding samples on which the reports will be reliable. Many chronic invalids, patients with nephritis, prostatic obstruction, or diabetes, should be given advantage of this service.

Write Dr. I. J. Murphy, 812 Pillsbury Bldg., Minneapolis, for information and containers.

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THE PLACE OF THE TISSUE LABORATORY IN THE SURGICAL CLINIC*

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During the last generation there has come about a most radical change in the methods of practicing medicine. The general practitioner, who treats all the ailments of all the members of the family, especially in the larger cities has been superseded to a varying extent by the trained specialist, who gives his attention only to some one phase of the problems of disease. With this intensive specialization in one branch of medicine must come correspondingly decreasing knowledge of and familiarity with other branches, particularly if, as in the present tendency of the times, special studies and a narrowed field of work are chosen and practised at an early period of the doctor's medical career. Therefore, highly trained and experienced clinicians must have, by reason of their superior attainments in their own line, a less expert, less detailed, and less practical knowledge of other, even though closely allied, branches of medical practice.

Even more widely divergent from the strictly clinical field are the specialties embraced by the so-called fundamental or laboratory sciences; in fact, up to the present time, pathology is about the only one of them which has secured any recognition as having even a distant relationship to the patient's welfare. Bacteriology in some advanced clinics and, less frequently still, bio-

chemistry, have been accorded a provisional standing, but whoever heard of an anatomist or a physiologist, to say nothing of a pharmacologist, becoming attached to any hospital or clinical group? Future possibilities in this direction are suggestive.

Even, however, with the present stage of specialization there have arisen diagnostic and therapeutic clinics, or the grouping together of a varying number of doctors, each representing some one branch of medicine, thus insuring quicker and more complete service to the patient as well as more efficiency among themselves. If it is once granted that specialism in medical practice is a logical development of the increasing extent and complexity of our medical knowledge, then "group medicine" presents the most ideal of working conditions. In such groups there must be a definite commercial or business basis, in order that proper division of funds may be made and a reasonable profit be obtained for each member. There is, only too often, a hesitancy in including a pathologist in such a group, for, while being of admitted value in improving the efficiency and quality of the work, he has no clientele of his own, and, instead of bringing his own new patients to the clinic, must draw his share of financial returns from funds contributed by the patients of the purely clinical specialties.

So the need of a pathologist in these clinics has often been met by employing a trained tech-

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nician, usually a girl with a high-school education or, more rarely, a college degree. Such a girl, if she be methodical and conscientious, may perform, with a fair degree of satisfaction, the routine clinical laboratory procedures, such as blood-counts, urinalyses, etc. If she has had some bacteriology in college she may take cultures, stain smears, etc.; and, if she has been fortunate enough to have had some chemistry, she may be able to manage the technical details of blood chemistry. But the natural limitations of such a technician are at once apparent in the field of tissue pathology. For this work one must have a medical degree, carrying with it an appreciation of the various anatomical and etiological factors in disease and their interrelations. Then, in addition, the specialist in pathology must have extensive training and experience, quite comparable to that of the so-called clinical specialties.

For the purpose of measuring and emphasizing the exact degree of importance of a pathologist to a clinic or hospital in the field of tissue diagnosis alone, it is important to analyze the result of such work on the tissues from a surgical clinic where there is on the staff an experienced pathologist, who routinely makes a microscopic examination of every tissue removed in the operating-room. Since such conditions prevail at the University Hospital, such a survey was taken on the work of the last four years.

All the microscopic examinations for each year were grouped under one of three heads: (1) those not necessary for a diagnosis; (2) those necessary in order to make a diagnosis; and (3) those giving valuable aid in making or confirming a diagnosis. No attempt was made to correlate clinical and pathological diagnoses or to show mistaken diagnoses; for, as usually obtains when there is co-operation between surgeon and pathologist, if there is doubt about the clinical diagnosis it is reserved until the pathological examination is made or, if the clinical procedure depends on the diagnosis, a biopsy is performed. Every tissue removed, including necrotic bone, deformed limbs, lipomata, and even leiomyomata and eyes were included since they were, and should always be, sent to the pathologist for record and examination, then for discard or section or such other purposes as may be indicated. The results of this study are best shown by the accompanying tables, but a few prominent features may be emphasized.

In Table I are included many tissues whose

microscopic sections, while not absolutely necessary for the diagnosis, yet were shown to be of great interest to the surgeon, as well as to the pathologist, not to mention the value of providing material for the teaching of pathology to medical students. For example, in this class were placed all gall-bladders and most appendices, yet very frequently a surgeon came to the laboratory with the query, "What did that last appendix (or gall-bladder) show?" In this class also were placed all advanced carcinomata, such as those of the breast or stomach, yet in all of these the microscopic section proved to be of definite interest. In the series of appendices one showing tuberculosis was found by routine section. In this particular case¹ the appendix was the first positive evidence of tuberculosis in the body, and gave opportunity for prognosis and detailed instruction to the patient concerning the mode of life necessary to benefit his condition. In this group were placed also 8 tuberculous kidneys. Although usually by pre-operative finding of bacilli in the urine and the gross appearance of the kidney, a diagnosis can readily be made, yet early or borderline cases of tuberculosis may so closely resemble the so-called "surgical kidney" or kidney abscess as to render the microscopic section of value as well as of interest. The sections of cervixes and curettings listed in Table I were done for therapeutic purposes, such as dilatation or repair with curetting, while those in Table II were done for diagnostic purposes. The abortions were all in the earliest months of pregnancy. In most of these tissues it can be easily understood that routine examination, while not absolutely necessary, may yield early or other interesting conditions not otherwise visible.

Table II needs very little explanation, representing, as it does, only conditions usually diagnosed by the aid of the microscope. The blood clots mentioned were all passed from the uterus and were suspected of being fetal membranes, in which cases curetting would have been advisable. The fact can hardly be over-emphasized that only by a consistent policy of thorough examination of every tissue is it possible to accord due weight to the figures revealed by Table II. If in the systematic examination of 100 appendices, 99 are found free from unexpected lesions and only one reveals an undiagnosed carcinoma or other major condition, the whole effort has been fully justified. The importance of complete routine physical examination of patients is continually urged, and that with the understanding that thus

only an occasional fact otherwise overlooked may be brought to light. Would we consider having our "physicals" performed by a technician? Do we owe any less to a field requiring, if anything, greater training and more experienced abilities?

Table III represents a more or less arbitrary division. Here are included borderline or ill-defined cases in which, while a diagnosis might be suggested clinically, nevertheless it needed confirmation by the microscope. The final question of benignancy or malignancy of any given tumor, the relative rate and limits of a tumor's growth, the extent and character of inflammatory lesions, are examples of valuable aid given to the elucidation of the cases in this table.

Table IV shows the condensed results of the more detailed tables. Particularly noteworthy is the fact that $33\frac{1}{3}$ per cent, or one-third of all tissues removed on the operating-table, need and demand an expert microscopic study. In a similar survey of the large number of tissues studied during the month of July, 1917, in the Mayo Clinic, MacCarty² found 20 per cent of all tissues removed at operation, or 1 in 5, absolutely needed microscopic study, in order to make a diagnosis.

Surely, such figures as these give to tissue pathologists a "place in the sun," and, having such a place, both the public and the medical profession have the right to demand that to his specialty the pathologist bring adequate training, experience, and ability to deliver clear judgments. For these qualifications he should receive due appreciation, both financial and professional. If, in the diagnosis of the condition of one in every three cases in which tissue is removed at operation, the pathologist must participate, and thus is implied the need of participating in the remaining two-thirds, he has definite responsibility. Is it logical to refer our surgical patients to only the best specialists in allied branches for additional aids to diagnosis, to the most advanced or up-to-date x-ray diagnostician, to the most skilled and progressive dentist, and then accept the pathological report of a non-professional assistant who is often forced to assume the rank of "pathologist"? Only too often a most skilled and conscientious surgeon turns his pathological material, that which he considers needs microscopic examination, over to the most unskilled person—to a technician who has obtained his or her meager knowledge wholly by the superficial method of experience, to a medical student interested in other things, or to another clinical man practicing medicine and "specializ-

ing" in tissue diagnosis as a side-line! Occasionally, the surgeon himself examines his own operation specimens regardless of the fact that his time should be devoted to his own specialty and that the successful study of surgery jealously allows little room for other specialties, even that of modern pathology. One must grant that rarely a competent surgeon has also become a reliable pathologist, but there are notable exceptions to the general rule. Since 1 in 3 tissues demands microscopic examination, the patient's rights *demand* that it be well done.

The increasingly frequent use of the biopsy, or removal of tissue for diagnosis, necessitates an available expert pathologist. The dermatologists for a long time have been willing to resort frequently to biopsies, but the surgeon fears that by cutting into a malignant growth he may disseminate the tumor cells throughout the circulation and assure early metastases. Wood³ noticed that in several cases diagnostic incisions were done with no ill effects, the patients being alive five to eight years afterwards. So, in 1919, he conducted an interesting series of experiments, which have an important bearing on this point. He used rats and an adenocarcinoma, which was easily transplanted into this strain of rats and which early metastasized. Six hundred seventy-three rats were inoculated at one time with this tumor and were divided into three groups. In Group 1, after the transplanted tumor was well established, a part of it was excised aseptically and the skin closed. After ten to twelve days the whole tumor was removed and in three to four weeks the animal was killed and autopsied. Of this group 22.2 per cent showed metastases.

In Group 2 no preliminary incision was made, but the whole tumor was removed at the same time as in Group 1. The animals were also killed at the same time, thus serving as controls for Group 1, and 21.8 per cent of these showed metastases.

Then, as a still farther control, in Group 3 no incision or removal was performed and the animals were killed at the same time as the others. Of these 32.2 per cent showed metastases.

Although one must admit that these experiments may not be exactly analogous to carcinoma in man, yet they show quite conclusively that diagnostic incisions, at least in rats, do not increase the possibility of metastasis. Wood suggests that the flow of blood tends to wash out the majority of the free tumor cells, leaving in the circulation only a few which the body prob-

ably can destroy, so that the biopsy may not be as dangerous as the diagnostic massage, where the cells must be forced into the circulation. He thinks, however, that to be on the safe side the radical operation should be done as soon as possible after the biopsy.

It may be of interest to mention the value of only a few of the biopsies done at the University Hospital during the last year. Several persistent skin ulcers proved to be tuberculous; an enormously swollen and rapidly growing lip of three weeks' duration, which baffled all attempts at diagnosis and was suspected of being a phlegmon, proved to be a very malignant sarcoma. A foul-smelling ulceration of the mouth, perforating the hard palate, which had resisted all attempts at treatment before being admitted, was a squamous-cell carcinoma. An enormous ulcerating infected thumb, previously diagnosed as some sort of a fungus infection, was also a squamous-cell carcinoma. A crusted ulcer on a lower eyelid, suspected of being a comparatively benign basal-cell carcinoma, proved to be a more malignant adenocarcinoma arising from the sweat glands. A jaw giving clinical and *x*-ray signs typical of sarcoma proved to be only chronic inflammation, thus avoiding the necessity of radical operation. And several internal inoperable carcinomata were diagnosed by the metastases in the external glands, thus saving the patient the risk of an exploratory operation. When upon the pathological report so often depends the question of life or death, or even of a mutilating operation, in many cases the biopsy will prove to be more fair to patient, clinician and pathologist by bringing about the most ideal circumstances for skill and logical judgment.

But when one has established more or less satisfactorily the importance and need of the trained and experienced pathologist, one is confronted by the fact that they are rapidly disappearing from the ranks of the medical profession; and, unless a remedy be soon found, they will have become an extinct species. The remedy is appreciation and recognition, both professionally and financially, by the allied branches of medicine. First of all, the pathologist must be kept in close association with the clinical branches and not relegated wholly to the dead-house or teaching laboratories. Although from an academic standpoint pathology is a laboratory subject, it is one that precedes and follows all manifestations of disease, helping most vitally in diagnosis, prognosis, and treatment. The clinical teacher must

not allow the student to turn his back upon pathology at the end of his sophomore year, remembering only the tedious microscopic work and interminable lectures back in the dim vista of his undergraduate days, but must continually remind the student of the fundamental conceptions upon which our medical knowledge is based, and demonstrate their vital association with clinical medicine.

The clinical man has his own realm, bounded by clinical signs and symptoms, where he reigns supreme. On the other hand, the pathologist has his own field of morphological appearances of tissue whose signs he alone can interpret properly, but in between the two is a common ground, not a "No man's land," but an everyman's land where the two should meet for free discussion and mutual education. The surgeon should go into the laboratory and keep in touch with the appearances of the changes in diseased organs and tissues which he has removed. The pathologist should go into the wards and learn to appreciate the difficulties of diagnosis unaided by knife or microscope. Then, and then only, can the two discuss the case logically and with benefit to the patient.

The financial remedy is just as important. Any laborer not accorded his proper hire will soon seek more fertile fields of endeavor. It is true that a surgeon, no matter how successful, could ill afford to pay the salary proper for the trained and experienced pathologist. However, it might be possible for several or many surgeons to share the services of one pathologist, who might have a laboratory in one of the larger hospitals; or a less satisfactory arrangement might be the establishment of a tissue laboratory in one or several of the large office buildings, maintained as are various *x*-ray laboratories. In either case the laboratory should be in charge of a most competent, well-trained, and experienced pathologist. Most certainly a hospital cannot expect expert service when it forces its pathologist to spend tedious hours in the technical procedure of preparing all their sections, a condition which is found in one hospital in this city.

Doubtless intelligent patients could be educated to the importance of diagnostic sections and would gladly pay for them as they already do for the blood count and the Wassermann test. Those unable to pay these fees have access to the charity or per diem clinic or hospital.

It is most certain that the medical profession most vitally needs the assistance of pathology as one of its necessary branches, and can ill afford

to allow it to sink into oblivion by passing into inadequate, poorly trained, inexperienced, or only temporarily interested hands.

SUMMARY

1. Statistics in the surgical clinic at the University Hospital show that microscopic study is needed in 33 $\frac{1}{3}$ per cent of all tissues removed at operation.

2. Biopsy is not as dangerous a procedure as formerly supposed, and should always be done in cases requiring careful diagnosis.

3. More co-operation is needed between pathology and the clinical branches, in order to get the best results in tissue diagnosis.

4. Pathology is a most important branch of clinical medicine and must not be allowed to deteriorate by being relegated to the domain of a merely nonprofessional technical assistantship.

Note.—I wish to express my appreciation to Dr. A. C. Strachauer, head of the Department of Surgery, for his co-operation with and appreciation of the tissue laboratory, and to Dr. H. E. Robertson, head of the Department of Pathology, for his supervision and assistance in the tissue work at the University Hospital.

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Table I. Microscopic Examination Not Necessary for Diagnosis

	1916	1917	1918	1919
Appendix	78	80	70	63
Gall bladder	18	17	14	16
Colloid goiter	13	17	14	12
Fallopian tube	22	17	6	11
Cystic ovary	14	15	10	6
Carcinoma	11	8	2	10
Leiomyoma	11	8	7	9
Prostate	5	6	8	10
Bone	10	12	5	2
Cervix	6	10	7	5
Inflammation .....	..	10	6	2
Osteomyelitis	5	4	..	6
Tissue from abortions.....	..	3	6	1
Dermoid	2	2	..	1
Lipoma	8	6	4	5
Varicose veins .....	..	3	1	2
Gangrene .....	..	3	..	1
Tuberculous kidney .....	..	2	3	5
Hemorrhoids .....	..	1	1	..
Eye	5	11	3	3
Pyclonephritis	2	1	..	2
Sebaceous cyst	1	1	..	2
Knee cartilage .....	..	1	..	..
Leukemia spleen .....	..	1	..	..
Cervical polyp	1	1	1	4

Ruptured colon .....	..	1	..	..
Tuberculous epididymis .....	..	1	1	1
Curetings	12	..	..	..
Necrotic tissue	6	..	..	1
Hemangioma	2	..	..	..
Cystic kidney	1	..	..	..
Nasal polyp	1	..	1	1
Pernicious anemia spleen.....	1	..	..	..
Tuberculous glands	1	..	..	..
Other tuberculous tissues.....	..	..	1	..
Hydronephrosis .....	..	..	1	..
Lymphangitis .....	..	..	1	..
Amputation stump .....	..	..	1	..
Branchial cyst .....	..	..	1	..
Undescended testicle .....	..	..	1	..
Gasserian ganglion .....	..	..	..	2
Gastric mucosa .....	..	..	..	1
Wart .....	..	..	..	1
Calcified gland .....	..	..	..	1
Total	236	242	177	186

Table II. Microscopic Examination Necessary for Diagnosis

	1916	1917	1918	1919
Carcinoma	15	15	16	10
Basal cell carcinoma.....	1	1	2	1
Sarcoma	10	7	1	6
Adamantinoma	1	..	1	..
Fibroadenoma .....	..	..	3	3
Myxofibroma .....	..	1	1	..
Adenoma	3	2	3	..
Papilloma	2	4	1	2
Mole	3	1	..	1
Cyst adenoma	2	1	..	1
Endothelioma	1	..	..	..
Xanthoma	1	..	..	..
Melanoma	1	1	..	..
Hypernephroma	1	..	..	..
Hemangioma	1	..	..	2
Chondroma	1	..	..	..
Fibroneuroma	1	..	..	1
Lymphangioma	1	1	..	..
Lymphoma	1	..	..	2
Curetings	11	14	16	14
Hodgkin's disease	2	1	..	..
Cystic cervical polyp.....	3	..	..	..
Mastitis	3	1	3	4
Interstitial hepatitis	1	..	..	..
Blood clot	1	3	2	..
Adenitis	1	..	..	1
Tuberculous mastitis	1	..	..	..
Inflammation	14	12	11	4
Cervix .....	..	15	7	..
Placenta .....	..	4	2	..
Myxo-lipoma .....	..	1	..	..
Gumma (liver) .....	..	1	..	..
Leukemia gland .....	..	1	..	..
Leukoplakia .....	..	1	..	..
Normal lymph node.....	..	2	..	..
Scleroderma .....	..	1	..	..
Fibroma .....	..	1	..	1
Tuberculous adenitis .....	..	3	3	2
Tuberculous salpingitis .....	..	1	1	..
Tuberculous osteomyelitis .....	..	1	2	..
Leiomyoma (labia) .....	..	1	..	..
Tuberculous laryngitis .....	..	1	..	..

Tuberculous ulcers of gum.....	..	..	1	..	Adenoma thyroid	1	5	1	3
Tuberculous ulcers of throat....	..	..	2	..	Abscess kidney .....	..	..	1	..
Cystic disease .....	..	..	..	1	Leukemic gland	1	..	..	1
Osteosarcoma .....	..	..	..	1	Mixed tumor	1	3	..	1
Tuberculous appendicitis .....	..	..	..	1	Tuberculosis of knee.....	1	..	..	..
Tuberculous ulcers .....	..	..	..	2	Papillary cyst adenoma.....	1	..	..	..
Epulis .....	..	..	..	1	Necrotic muscle	1	..	..	1
					Condyloma	1	..	..	..
Total	83	99	79	61	Caruncle .....	..	1	..	2
Table III. Microscopic Examination of Value in									
Helping to Make Diagnosis									
	1916	1917	1918	1919	Glioma .....	..	1	..	..
Carcinoma	10	18	9	1	Tuberculosis of appendix.....	..	1	..	..
Basal cell carcinoma.....	1	..	1	..	Tuberculosis of hand.....	..	1	1	..
Inflammation .....	..	5	7	5	Tuberculosis of foot.....	..	1	..	..
Toxic goiter	1	2	3	2	Erosion (cervix) .....	..	..	..	1
Papilloma .....	..	2	2	..	Kidney .....	..	..	..	1
					Sarcoma .....	..	..	..	4
					Total	19	40	25	22

Table IV. Summary of Results

	1916		1917		1918		1919		Average
Specimens examined	338		381		281		269		
Not necessary for diagnosis.....	236	70.0%	242	63.5%	177	63%	186	69.5%	66.5%
Necessary for diagnosis.....	83	24.5%	99	26.0%	79	28%	61	22.5%	25.25%
Helping diagnosis	19	5.5%	40	10.5%	25	9%	22	8.0%	8.25%
Of value in diagnosis.....	102	30.0%	139	36.5%	104	37%	83	30.5%	33.5%

ARSPHENAMIN DERMATITIS*

By GEORGE MANGHILL OLSON, M. D.
MINNEAPOLIS

Drugs or chemicals used in the destruction of animal or vegetable parasites necessarily act as protoplasmic poisons. To a greater or less degree, therefore, all drugs used for the purpose of destroying the spirochaeta pallida act as poisons, and injure or destroy some of the cells and tissues in man. The discovery of arspfenamin, in 1909, proved to be no exception to this rule.

The acute accidents of an anaphylactoid or nitrinoid nature, following the administration of arspfenamin, seem to be due entirely to the non-arsenic group; or, at all events, the element arsenic seems to play a minor part in the causation of these accidents. On the other hand, the more remote accidents, as arspfenamin dermatitis, are evidently due entirely to the arsenic element. The clinical pictures of arspfenamin dermatitis and arsenic dermatitis are strikingly similar, if not identical.

HISTORICAL REVIEW

In 1910 and 1911, shortly after the use of old salvarsan, cases of morbilliform, scarlatiniform, and other arspfenamin eruptions were reported by Wechselmann,¹ Weiler,² and Fruhwald.³ Since then there apparently has been a gradual

increase in the number of patients with arspfenamin eruptions. Possibly, this is due to the fact that more patients are now receiving arspfenamin treatment. In all probability, however, the greater frequency of arspfenamin eruptions is due to the greater total dose that patients now receive, even though there has been a decrease in the amount of arspfenamin given at one injection.

TOXICITY OF ARSPHENAMIN

The toxic effects, both immediate and remote, of arspfenamin may be inherent in the absolutely fresh, pure substance itself, or they may be due to a product that is poor even at the time of manufacture. At times toxic by-products are formed if the vials are kept for some time before using. An imperfect technic in the preparation of the solution may result in the formation of toxic products.

Reports in the literature show that both early and late toxic effects have followed the administration of arspfenamin of every brand manufactured. The conclusion, therefore, is inevitable that the toxicity of arspfenamin is inherent in the nature of the substance itself as a protoplasmic poison. In other words, the manufacture of a non-toxic arspfenamin is as impossible as the

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manufacture of a non-toxic bichloride of mercury. Toxicity is inherent in all the really valuable drugs that we use in the treatment of syphilis. As arsphenamin is inherently toxic and unstable, it is to be expected that the toxicity is greatly increased by poor manufacture, or an imperfect technic in the administration of the drug.

THE PATHOGENIC MECHANISM

Drug eruptions, in general, are acute in character, coming on suddenly after the ingestion of the drug, and disappearing promptly after its withdrawal. The acute nature of these drug eruptions is shown by the extensive distribution, by a bright-red color, and often intense inflammatory symptoms.

Iodine, bromine, silver, arsenic, and arsphenamin, and probably mercury, constitute a group that are a marked exception to the above rule. These drugs may give a dermatitis medicamentosa that conforms to the general characteristics of the acute drug eruptions. Frequently, however, they give an entirely different picture. The eruption may first appear after the patient has taken the drug for months or years. At times the onset of the eruption is delayed for weeks or months after the drug has been discontinued. The lesions are chronic in character, often non-inflammatory, and persist for weeks, months, or years, even though the drug is discontinued.

All drugs that cause these peculiar chronic drug eruptions tend to be accumulated and retained by the various tissues of the body. This tendency toward retention or storage is extremely marked in the case of silver, is quite marked in the case of arsenic, and exists to a lesser degree in the case of iodine and bromine. Following the long-continued use of mercury, globules of metallic mercury may be found in the bones at operation or at autopsy. This accumulation or storage of the drug in the tissues constitutes the only essential difference between the pathogenic mechanism of these peculiar chronic drug eruptions and the ordinary acute drug eruptions. It also seems probable that there is no essential difference between drug eruptions produced by external applications or dermatitis venenata and the drug eruptions from internal use or dermatitis medicamentosa.

Drug eruptions of all kinds are produced by the direct chemical irritating effect of the drug itself on the various cells or tissues of the body. The type of lesion in any particular case denotes

the kind of tissue, cells, or organ, that has been irritated or inflamed by the drug.

Drugs introduced by ingestion or injection are brought into contact with all the elements or tissues of the skin. In many instances all the elements of the epidermis and true skin are irritated and inflamed, constituting what might be termed a pan-dermatitis. This may occur following an injection of arsphenamin, and the clinical picture is that of a generalized, painful, erythematous dermatitis with edema of the skin. This condition resembles a burn of the first degree, and, except for severity, is comparable to the effect produced by the external application of an arsenic paste.

The erythematous, papular, vesicular, squamous, and exfoliating lesions can all be produced by the direct chemical action of arsphenamin on the lower layers of the epidermis and the true skin. Secondary infection may ensue with the formation of pustules, and such lesions as pustular paronychia. There is some evidence to the effect that inflammation of the vessels of the skin, and especially the arterioles, may produce lesions resembling the erythema multiforme group. So-called vasomotor phenomena may be local or peripheral and not central in origin. Severe arteritis produces gangrene. Inflammation of the cutaneous nerves and nerve-endings produces symptoms of itching, tingling, and pain. Arsphenamin acting on the posterior ganglia causes a ganglionitis and an eruption of herpes zoster.

Certain regions, such as the face, palms, and soles, are especially susceptible to the action of arsphenamin.

HYPERSUSCEPTIBILITY

Hypersusceptibility to small doses of arsphenamin is not very common, and usually arsphenamin eruptions follow moderately large to large total doses given in a relatively short period of time.

SYMPTOMS

Arsphenamin dermatitis is one of the many skin diseases in which the clinical picture is extremely varied. Almost any form or type of lesion of the skin may be present, either singly or in varied combinations, and the clinical picture is often rendered more complex by the presence of secondary infection.

In many patients the clinical picture is rather simple, and the symptoms and course correspond to a distinct clinical type. In other patients the

lesions do not conform to any type, and the eruption may show a composite picture of one or more types. The recurring eruptions may be quite different from the first eruption.

Most cases of arsphenamin eruptions can be placed in one of the following groups:

1. Pruritus.
2. Urticaria.
3. Purpura.

Purpuric spots occurring after arsphenamin injections may not necessarily be serious, but the use of arsphenamin should be discontinued if there is even slight hemorrhage from the mouth or nose or large ecchymoses. Fatal cases of purpura have been reported, following the use of arsphenamin.

4. Erythema multiforme.
5. Erythema.

Localized erythematous patches may occur, at times with scaling and resembling patches of seborrheic dermatitis. The face is especially susceptible to this type of eruption.

6. Erythema scarlatiniforme.

The incorrect diagnosis of scarlet fever may be made because of the fever, rash, and constitutional symptoms.

7. Measles-like or morbilliform rash.
8. Dermatitis exfoliativa.

Usually the symptoms are comparatively mild, and the patient recovers. Severe constitutional disturbances may be present and lead to a fatal result.

9. Keratoses or keratotic papules of the palms and soles.

These papules are rather indolent, often deeply placed in the skin, and may closely resemble papular syphilides of the palms and soles.

10. Papular eruption resembling syphilis.

In addition to the palmar papules, similar lesions may be present over the body, and cause some difficulty in the differential diagnosis from recurrent papular syphilis.

11. Vesicular, papulovesicular and papulopustular eruption resembling eczema.

12. Pigmentation or melanosis.

The rash is at times accompanied or followed by pigmentation. The pigmentation is brown, dark-brown, black, or the rain-drop pigmentation—a grayish-brown dappled or mottled staining of the skin, with pale areas around the follicles.

13. Herpes zoster and herpes simplex.
 14. Alopecia and loss of finger- and toe-nails.
- Alopecia may be slight or very extensive. The

effect of arsphenamin may be sufficient to cause shedding of the finger- and toe-nails.

15. Jaundice.

Jaundice may occur early or late, and with or without other lesions of the skin.

PREVENTION

In patients who are especially susceptible to arsenic or arsphenamin, an acute eruption may appear shortly after an injection of arsphenamin, or an eruption may appear after many months, even though only one injection had been given. This, however, is unusual. Nearly all the patients with arsphenamin eruptions have received six to eight or more injections in a relatively short period of time, as six weeks.

Arsphenamin is poorly eliminated in patients who have damaged hearts or kidneys. Even in normal persons, however, there may be a tendency toward the storage of arsphenamin, especially after a total dose of three or four grams has been reached.

The presence of hyaline casts, even though albumin is absent, in a patient whose urine was normal before treatment, may indicate arsphenamin retention and damage to the kidneys. An interval of rest or a change to mercury is often indicated after six injections of arsphenamin.

TREATMENT

Marked improvement following venesection has been reported in the acute rash of the dermatitis exfoliativa type. In the more chronic or subacute types of arsphenamin dermatitis, treatment is largely symptomatic. As in other forms of dermatitis medicamentosa, the use of ultra-violet light and the *x*-ray results in immediate and marked improvement. Ammoniated mercury ointment rapidly cleared up the pustules that formed on the hands of one of my patients. A pustular paronychia that developed required prolonged treatment, finally responding to the *x*-ray.

REPORT OF CASES

CASE 1. In March, 1919, this patient, a young man, age 25, showed a typical primary lesion on the penis. *Spirochaeta pallida* was present. During the next three months he was given seven injections of neo-arsphenamin, or a total dose of 4.2 grams, and twelve injections of mercury salicylate or a total dose of 0.72 grams. The seventh injection of neo-arsphenamin was given on June 7, 1919.

On August 13, 1919, over two months after the last injection of arsphenamin, an eruption of papules, vesicles, and squamous patches appeared on the hands, feet, and axillæ. Keratotic papules were present in the palms and soles, and bore a striking resemblance to palmar syphilis. The other lesions did not resemble

syphilis. As the patient had not received any arsphenamin for over two months, the diagnosis of arsphenamin dermatitis was not made at that time. Due largely to the insistence of the patient, he was given another injection of arsphenamin on August 15, 1919. This last or eighth injection of neo-arsphenamin resulted not only in an extension of the eruption, but in a marked exacerbation of the symptoms, as burning, itching, etc., in the old lesions.

The backs of the hands and fingers presented an eruption of papules, vesicles, pustules, and squamous patches, resembling eczema. The eruption in the palms and soles consisted of deep keratotic papules resembling syphilis. On the forehead and in the axillæ, the eruption presented an appearance very much like psoriasis or seborrheic dermatitis. The patient complained of itching, burning, and a marked feeling of tension. The urine showed a trace of albumin and many hyaline and finely granular casts.

The condition gradually improved, although the rash recurred four times, as a rule at the site of the old lesions. The last very slight outbreak occurred in January, 1920. A pustular paronychia finally yielded to x-ray treatment.

CASE 2. This patient, a woman, aged 38, was treated at the University of Minnesota Dispensary. In addition to syphilis, she had a slight acne rosacea, and following the fifth injection of neo-arsphenamin there was an increase in the severity of the symptoms due to the acne lesions. After the sixth injection, a widespread patchy dermatitis appeared over the face, forehead, and neck. Arsphenamin was discontinued, and the condition very slowly improved.

CASE 3. A young man, aged 19, with the primary lesion of syphilis on the lip, was given weekly injections of neo-arsphenamin at the University of Minnesota Dispensary. A roughened maculopapular eruption on the arms and legs followed the fifth injection. The patient complained of intense itching.

SUMMARY

1. Arsphenamin dermatitis is a not uncommon affection of the skin at the present time, due to the more general use of arsphenamin, and the increased total dose that patients now receive.

2. The clinical picture of arsphenamin eruptions is varied and extremely complex.

3. The rash may be delayed for weeks or months after the injections of arsphenamin have been discontinued.

4. Arsphenamin eruptions are nearly always due to the direct inflammatory action of arsphenamin on the various elements of the skin.

5. The toxicity of arsphenamin, as shown by acute accidents as sudden collapse and death, and remote accidents as dermatitis, is inherent in the substance itself.

6. The inherent toxicity of arsphenamin is greatly increased by poor manufacture or imperfect technic in its administration.

7. To patients in whom there occurs a storage or retention of arsphenamin, further injections must be given with caution, as serious or even fatal results may follow.

8. Treatment is symptomatic. Venesection is of value in the acute forms of arsphenamin eruptions. Improvement in the chronic or subacute forms of arsphenamin dermatitis follows the use of actinic or ultraviolet light and the x-ray.

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A STUDY IN INFLAMMATIONS AND ATROPHIES OF THE OPTIC NERVE

By CHARLES DARCY WRIGHT, M. D.
MINNEAPOLIS

EMBRYOLOGY AND HISTOLOGY

During the first month of fetal life an optical vesicle forms on either side of the forebrain. The lens bud, pressing from below and behind, invaginates this vesicle and forms the optic cup. The mesoblast, around the lens, grows into the invagination, and the accompanying artery becomes the central artery of the retina. This marks the upper limit of the invagination of the optic stalk. The optic fibers develop as processes of the neuroblast of the invaginated layer, and grow into the brain from the retina along the optic stalk. They form most of the fibers of the

optic nerve. The optic vesicle and the optic nerve represent the forebrain.

The essential elements of the retina are three: the sensory visual cell and two nerve cells, the bipolar cell, and the multipolar or ganglion cell.

The visual cell is made up of two parts: externally, either a rod or a cone; internally, a cell body with a nucleus. The rod is a long cylinder with a free end and an end continuous with the cell body. The cell body is fine, with centrally striated nuclei, ending in a spherical knob.

The cone is transversely striated, shorter than the rod, nucleated, and ends in a pedestal.

The bipolar cells are arranged perpendicularly to the surface of the retina. Their processes (single or branched) anastomose with a rod or cone, or both. Their cylinder axes anastomose with the multipolar cells. Those cells which connect with the cones anastomose with the dendrites of the multipolar cells; while those of the rods anastomose with the cell body itself.

The multipolar, or ganglionic cells, form a single layer, and their dendrites and cell bodies anastomose with the bipolar cells. Their axis cylinder processes varicose, are very fine (without myelin sheath or sheath of Schwann), and form one of the fibers of the optic nerve.

The bipolar cells correspond to the cells of the spinal ganglia. The multipolar cells represent a central sensory nerve cell. The sense of sight is thus arranged in one thin membrane.

The two limiting membranes are formed by the spread-out ends of the fibers of Müller, which are placed between the retinal elements, which they support. They are epiblastic connective tissue or neuroglia. Several sensory cells articulate with one bipolar cell, while several bipolar cells enter into connection with a single ganglion cell.

ANATOMY

At the fovea centralis, or yellow spot, a depression shows in the surface of the retina about 2 millimeters in diameter. At its edge, the retina is thickest, about 350 microns thick, while the center is 100 microns thick. Here the cones are long and narrow, and the rods are absent. The two reticulate layers disappear at the fovea, and only the nucleated cones, inner nuclear, and pigment layer exist. Hence light falling on the fovea falls directly on the cones. The multipolar cell is also next to a single bipolar cell which itself anastomoses with a single cone, therefore there is no diffusion of visual impressions. At the disc the retinal layers appear beveled off at the internal side. They all appear at once on the external side. This is responsible for the phenomenon occurring in neuritis and optic atrophy as we shall see further on. At the ora serrata the rods diminish and cones next disappear, rapidly followed by a disappearance of the other layers. The fibers of Müller are much developed.

The peripheral visual tract consists of the retina, the optic nerve, the chiasm, and the optic tract.

The primary optic centers are the external geniculate body, the pulvinar of the optic thalamus, and the anterior corpus quadrigeminum. The

optic fibers occupy a constant position in their course through the peripheral visual path. Lesions of the optic paths in general produce as follows:

Lesions of the optic nerve produce homolateral amaurosis and homolateral direct pupillary reaction; contralateral of consensual pupillary reaction.

Lesions of the median part of the chiasm produce bitemporal hemianopsias.

Lesions of the optic tract produce hemianopsias, macular disturbances, hemianopic iridoplegia, ipsilateral ptosis.

Lesions of the ventral or dorsal part of the geniculate body produce quadrant hemianopsia.

The optic nerve penetrates the choroid and sclera, forming thereby the intrascleral or orbital portion. The external laminae of the sclera are reflected back upon the exterior sheath of the nerve. The innermost lamina crosses the scleral foramen, and is perforated by openings for the passage of the funiculi of the optic nerve. A few fibrous bands of the choroid cross the scleral foramen. Within the scleral foramen the optic nerve is traversed by numerous sectors of connective tissue called the *lamina cribrosa*. The scleral foramen is not as large as the optic nerve. In order to enter it, the optic nerve sheds the medulla of its nerve fibers, and changes in color from a pearly white to a translucent gray, and is so seen when viewing the optic disc.

Surrounding the optic nerve the intervaginal spaces, situated on either side of the arachnoid sheath, are filled with lymph. The outer boundaries of these spaces are formed by the dural and pial sheaths, and the spaces are known, respectively, as the subdural and subarachnoid spaces. The supravaginal space lies between the capsule of Tenon and the dural sheath. The intervaginal spaces communicate posteriorly with the subdural spaces of the brain. These spaces are divided by bands of connective tissue and lined by endothelial cells.

INFLAMMATION AND EDEMA OF THE OCULAR DIVISION OF THE OPTIC NERVE

Papillo-edema, papillitis, and optic atrophy are only symptoms of disease, not diseases in themselves. Diagnosis of pathologic conditions often is first made by inspection of the optic nerve and its termination.

PAPILLO-EDEMA

Papillo-edema is an edema of the non-medullated portion of the papilla from pressure. The

laminae bulge, and the edema first shows on the external side of the disc, where we have seen all layers of the retina appear at once. There is proliferation of the neuroglia. The medullated portion of the fibers later shows degeneration. Distention of the nerve sheaths is common, the subarachnoid space being the one most generally affected. The edema of the nerve is usually interfascicular. The edema extends into the nerve fiber layer of the retina.

In papillo-edema inflammatory symptoms are limited more to the papilla, while the orbital nerve may be normal. The papilla is greatly swollen by accumulation of lymph and blood, and it projects out into the interior of the eye—mushroom like—is thickened at its base, and gives actual tumefaction. The retina is pushed aside by the gorged optic nerve, extravasations of blood are found, also swelling of the nerve fibers and cellular infiltration along the blood vessels. Connective tissue is formed in the papilla, due to the organization of the exudate. It is, however, by the consequent shrinking of the connective tissue that the fibers of the optic nerve are rendered atrophic (neuritic atrophy). We have then finally a papilla composed of a network of connective-tissue bands and thickened blood vessels.

PAPILLITIS

There is a perivascular infiltration of leucocytes around the vessels. The arteries are small, and the veins dilated and contorted from engorgements. The connective tissue around the vessels proliferates, and the adventitia becomes thickened. The physiological cup fills up. Interstitial infiltration of the nerve cup is marked. There is increase in the neuroglia and interstitial connective tissue.

THE SUBJECTIVE SYMPTOMS OF INTRA-OCULAR NEURITIS

The subjective symptoms of intraocular neuritis are greater or less disturbances of vision, increasing so that in severe cases complete blindness is present during the inflammatory stage. A quite characteristic symptom is flitting blindness, repeated many times a day. Often persons so affected see well after a night's rest, but very poorly in the afternoon. (These are generally cases from nutritional diseases where the heart action is better in the morning.) Enlargement of the blind spot, contraction of the field of vision, sometimes hemianopia, are often found.

The subjective symptoms of intra-ocular neuritis may be confounded with hysterical phenomena

and lesions of the visual-path fibers in the occipital lobe. Hysteria is easily eliminated. Occipital lesions occur generally with arterial change or from trauma. Arterial lesions of visual-path fibers of the occipital lobe usually occur with age.

In acute anemia following extreme hemorrhage, papillitis occurs with rapid and permanent loss of vision.

Under diseases of nutrition the most common causes of neuritis are albuminuria, diabetes, tuberculosis, anemias, poisoning from lead, wood alcohol, iodine, arsenic, phosphorus, and so forth; intestinal toxemias and menstrual, lacteal, and gestational malnutritions. In the latter three, the prognosis is good.

When papillitis occurs with amenorrhea, the prognosis is bad, as the underlying cause is usually serious diseases, as brain tumor or tuberculosis. The contraction in the field of vision in papillitis often appears under the form of hemianopia. In some cases there is a marked enlargement of the blind spot. The symptoms of intraocular neuritis and intra-orbital neuritis must, per se, many times overlap. The neuritic inflammations run a chronic course, even into the months, before the atrophic stage begins.

INFLAMMATIONS OF THE ORBITAL DIVISION OF THE OPTIC NERVE

Inflammation of the orbital division of the optic nerve may show no change whatever in the papilla. At all times the changes are insignificant until after the disease has subsided, when the signs of atrophy appear, if the neuritis has been sufficient. Destruction of the optic fibers has taken place where the focus of inflammation existed. This is slowly transmitted to the papilla, where it is visible with the ophthalmoscope. (Descending atrophy.) Owing to the lack of visible change of the disc in this form of retrobulbar neuritis, diagnosis must be made early, often mainly on the subjective symptoms. In many cases the vision is very little disturbed, but in some cases may reach the point of complete blindness. These cases are few and are confined to those where all nerve fibers are affected. In many cases the papillomuscular bundle of fibers only is affected, and there is a central scotoma in the field of vision. This scotoma differs from the scotoma produced by the inflammation of the choroid and retina in that there is no change in the apparent shape and size of objects in or about the scotoma; and the first colors to disappear are red and green. In primary disease of the macula, there is retinal metamorphopsia. In lesions of the per-

ceptive elements, i. e., the rods and cones, as in retinitis pigmentosa, choroiditis, etc., the scotoma is differentiated from papillomuscular bundle scotoma by the fact that blue disappears first in scotoma from disease of the rods and cones, and metamorphopsia usually is complained of, while in the latter scotoma red and green first go—an important differentiation.

SUBJECTIVE SYMPTOMS OF ACUTE ORBITAL NEURITIS

The acute form is characterized by the suddenness of the disturbance of vision. Sight may be abolished in a few days, and the eye may look normal externally, except that the pupils are dilated in proportion to the blindness. The ophthalmoscope may show some distention of the retinal vessels, and sometimes an ischemia, which is caused by pressure on the central artery. There is generally dull pain in the orbit, and the eyeball is sensitive to touch and pressure. Acute retrobulbar neuritis may be the result of inflammation of the surrounding orbital tissue, or may be an endothelionic inflammation of the nerve. Violent cold, influenza, diseases of the accessory sinuses, especially of the ethmoid cells, the teeth, and the tonsils are contributing causes; also the diseases noted as causes of intra-ocular neuritis. Exophthalmos often aids in the diagnosis when the disc shows little change, as does paralysis of the eye muscles which lie close to the inner wall of the orbit, namely, internal superior rectus, superior oblique or levator palpebrae. Retrobulbar neuritis may come from disseminating sclerosis where it is generally an early symptom, from acute infectious diseases, toxic conditions, disturbances of menstruation, tuberculosis, and heredity. The cases due to nasal affections subside generally before they become very serious, and vision returns, but central scotoma often remains. In rare cases, even in slight attacks, all the nerve fibers are affected, and permanent blindness results from the consequent atrophy. So one must be guarded in each prognosis. Recurrence is sometimes observed after many years.

OPTIC ATROPHY AND ATROPHY OF THE PAPILLO-MUSCULAR BUNDLE OF FIBERS

It is often difficult to diagnose between optic atrophy and diseases of the papillomuscular bundle of fibers. There is progressive loss of vision with only a little pallor of the disc in both cases. The pallor usually shows on the temporal side. In atrophy there is at the commencement

contraction of the periphery of the field, and no central scotoma. In disease of the papillomuscular bundle of fibers, the field will not contract at first at the periphery and there will be a central scotoma.

Oxycephaly gives increased pallor of disc from the bone growth pressure.

Simple atrophy generally comes from tabes, general paresis, multiple sclerosis, syphilis, and diseases of the hypophyses (hypophyseal tumor) with acromegaly, congenital spastic paralysis, or Little's disease of the cord.

Some cases of retinitis pigmentosa resemble optic atrophy somewhat. These are misleading when the rare form occurs where the pigment does not cover the artery. In these cases the history of consanguineous marriage of parents, the yellow color of the disc and the fine vessels lead us to a correct diagnosis if the choroidal disturbance is also observed. Optic atrophy may occur with syphilis as one of the secondary symptoms, or it may come on later as a complication of brain lues. Some question has arisen as to whether blindness occurring after the exhibition of salvarsan was due to the salvarsan or not. The salvarsan liberates spirochætae rapidly, and they and their toxins produce blindness. When mercury has first been given the excitation from the salvarsan is not sufficient to produce blindness.

Tabetic atrophy begins in the ganglionic cells of the retina. The color field is contracted first for green. White field contractions soon follow. Blindness generally results in from two to three years. The contraction is centric or in sectors. There is always peripheral contraction first; never scotoma nor true hemianopsia. The contraction of the temporal side of both fields sometimes simulates hemianopsia. The pupil aids us in diagnosing optic atrophy that comes from general paresis, cerebral syphilis, multiple sclerosis, and tabes. When the pupils are dilated and there is anisocoria, and no reaction to light or convergence, the optic atrophy is from general paresis.

Cerebral syphilis is often accompanied with optic atrophy and internal ophthalmoplegias, bilateral ptosis, and hemianopsia. In cerebral syphilis the optic symptom is generally bilateral, for some time at least.

Optic atrophy from multiple sclerosis is often accompanied with nystagmus, ephemeral paresis of the ocular muscles, and paresis of the associated muscles. In tabes the optic atrophy is usually bilateral at first, generally accompanied by the Argyll-Robinson pupil. The loss of the pa-

tellar reflex with optic atrophy and the Argyll-Robinson syndrome constitute ground for diagnosis of tabes.

Idiopathic optic atrophy may occur, or, to put it more properly, the cause may remain undiscovered. Congenital optic neuritis known as Leber's disease, shows atavistic reappearance usually, and it is often accompanied by epilepsy. The disc is red, the margins much blurred (if discernible at all), and the vessels slightly engorged and somewhat tortuous. These changes may be physiologic and found in high degrees of hyperopia. Colloid excrescences often show as yellow spots at the margin of the disc in the hyperopic cases.

In complete simple atrophy the disc shows white or bluish-white. No new fibrous tissue, no new interstitial infiltration, no new growth of neuroglia, the vessels from Zinn's plexus disappear, but the other papillary vessels are not much altered as to size, there may be peri- or endovascularitis. As the nerve fibers disappear, the sectors and neuroglia look larger by comparison, the pial sheath is thickened, and the dural sheath shrinks. The nerve shrinks from the sclera. Small gray spots mark the remnants of the meshes of the lamina cribrosa.

In complete secondary atrophy the disc shows gray, blue, or greenish-white, and is smooth and opaque. The sectors are thickened, the nerve fibers have disappeared, there is much proliferation of neuroglia, and new fibrous tissue is seen in the physiological cup. The margin of the nerve is irregular and slightly blurred. The vessels are small.

Intradural tumors of the orbital portion of the nerve give an exophthalmos from pressure in the sheath. They may give primary atrophy or optic neuritis with secondary atrophy. They are generally sarcoma, and in this region grow slowly. Extradural tumors are usually endothelioma. Exophthalmos is usually present in contradistinction to the intradural tumors that generally give no exophthalmos, but generally give papilloedema from pressure on the lymph spaces. Inflammation of the optic nerve starts from its connective-tissue portions. Cellular exudate is formed in perineuritis. Within the trunk of the nerve the inflammation attacks the sectors, and the nuclei multiply (interstitial neuritis).

CUPS AND CIRCULATION—EXCAVATIONS OF THE DISC AND ARTERIAL TORTUOSITY

The papilla is normally white, and the white spot that marks the location of the excavation is

circled by a pink zone, which defines the physiological cup. This may be small or large, shallow or deep, abrupt or gradual in its recession.

The atrophic excavation often recedes gently, and in this matter much resembles the physiological cup. In such cases differentiation may be made by the color of the disc, which in atrophy is abnormally white, grey, or blue. The glaucomatous cup has precipitate walls with similar color to the atrophic cup. Some physiological cups touch nearly the whole margin of the disc, and to the tyro there is difficulty in differentiating the three. We must rely on the color and the manner of recession. The vessels of the fundus hook over the edge of the cup in glaucomatous excavation. In case of late glaucomatous cup the halo will not deceive us by its color, because we have already noted the advanced stage of the disease from other unmistakable symptoms. The glaucomatous halo is never present until the disease is well established. Coloboma of the optic sheath may have precipitate marginal cupping. But the papilla is so much larger and the other symptoms of glaucoma are so wanting that there is no excuse for mistake.

In the normal fundus arteries never cross arteries, veins never cross veins. Tortuosity of the vessels is often physiological, as well as pathological. Physiological tortuosity is generally bilateral, and the tortuosity is on the same plane as the retina, except in the very rare case of twisted cord of the hyaloid artery, which may persist in the papilla.

Pathological tortuosity is often unilateral, and the tortuosities are anteroposterior, as well as on the same plane as the retina.

We see the blood in the vessels of the fundus, not the vessel sheath. Sometimes in normal eyes we often see white or pale-yellow streaks along the sides of the blood columns, often in the papilla, more rarely in the retina. The chorioretinal vessels, running from the papilla to the retina, are normal; they are from Zinn's vascular plexus, and not from the central artery. These sometimes furnish enough nourishment to preserve a small amount of vision when the circulation in the central artery has been entirely shut off.

Venous pulse is normal in the eyes of the young, and may be produced by a pressure on the eyeball after youth has gone. In partial or complete occlusion of the central vein such pulse cannot be so produced.

Arterial pulse always means imbalance, in the relation of systemic and the intra-ocular blood

pressure. It may occur in glaucoma, arterial sclerosis, and all diseases producing a high blood pressure.

Bright rings or lines that change with the motion of the head or mirror are light reflections. They are often seen in the fundus of young people. Shadow rings exist in posterior staphyloma of myopia.

THE INTRACRANIAL PORTION

Lesions of the optic tract produce homonymous hemianopsia and positive hemiopic pupillary reactions. Generally these lesions come from hemorrhage, softening, tumor, or lues. Owing to the small size of the tract, hemorrhage seldom occurs in it. Hemianopic defects are usual in meningitis. Syphilis has a predilection for the optic tracts, next, probably, to the chiasm. Visual defects vary. Optic atrophy may result without papillitis. The ocular and fifth nerves may be affected.

A central ganglia lesion produces no alteration of the visual field, though it may affect the pupil. There are no optic fibers in the pulvinar nor in the anterior corpora quadrigemina.

Disturbances of the function of the external geniculate body produce disturbances of the field. The external geniculate body is so small that pathological processes seldom are limited to it alone, but invade the neighboring structures. The auditory tract passes from the posterior quadrigeminal body through the external geniculate body to the temporal lobe. The sensory tract passes through the posterior segment of the internal capsule from the lemniscus to the posterior central convolutions. (Farther away are the nuclei of the ocular nerves and the middle division of the internal capsule, which contains the motor tract.) Hemorrhages are frequent in the internal capsule. This explains hemiplegias, which are accompanied by hemianopsias. When they compress the geniculate body fully, complete hemianopsias result. Tumors of the central ganglia may press on the geniculate body or the tract and produce hemianopsias. The thalamus may be destroyed without causing a visual disturbance.

A lesion only in the lateral part of the occipital medulla can cause homonymous hemianopsia or scotomata without hemiopic pupillary reaction. Hemianopsia may be produced by injuries of the parietal region; the most dorsal of the visual fibers attain the height of the lower portion of the angular gyrus. Lesions here are wounds, hemorrhages, softening, abscesses, and most often tumors. A common and important lesion here

is temporal abscess from otic origin. It involves the optic paths, and produces homonymous hemianopsia with disturbances of speech, if it be on the left side, and through distant action produces disturbances; hemiplegia, paralysis of any or all of the third nerve, and dilated pupil, as well as papillo-edema—no hemiopic pupil reaction.

Hemianopsia does not occur in affections of the meninges with otic transfer of unicellular microorganisms. This is of great importance as a diagnostic symptom. Lesions of the posterior cerebral arteries cause softening of the optic path in the temporal lobe. It is difficult (when the lesion is in the right hemisphere), if from the presence of homonymous hemianopsia a process in the occipital neuron of the optic tract is suspected, to determine whether the medulla of the parietotemporal lobe or the occipital lobe is affected, as the right parietal and temporal lobes do not possess characteristic functions. A lesion of the internal capsule shows as hemiplegia with hemi-anesthesia. Central deafness or an otitic process speaks for the central lobe. If the process is on the left side aphasia is a symptom. It is possible to differentiate processes in the parietal lobe from softenings in the occipitotemporal lobe; the former giving quadrant hemianopsia downward, and the latter quadrant hemianopsia upward. Tumors occur in the parietal lobe, and abscesses are usually otitic in origin and are situated in the temporal lobe. Hemorrhages occur in any position of the optic paths.

Visual path fibers in the occipital medulla are spread out, hence lesions here may be quite extensive and affect a small number of visual fibers only. The result is defects in the field quadrant, sectorial, or even small scotomata. The disturbance is always hemianopic. Disturbances in the occipital lobe are often circulatory. They are protean. Scintillating scotoma with attacks of migraine, clouds which remain for some minutes in the field of vision, flashes of light, and homonymous defects in the visual field, transitory hemianopsia, are the most prominent. Hallucinations confirm the diagnosis.

In uremia sudden blindness is due to disturbances of circulation in the occipital lobe. The occipital lobe, ipso facto, frequently suffers from trauma.

Abscesses in this region may be otitic, metastatic or traumatic; visual disturbances are usually homonymous, bilateral hemianopsia, and macular defects.

Trauma from fracture in this region usually

produces unconsciousness and temporary blindness. The vision usually clears up, leaving scotoma.

Primary tumors very often originate in the parietal lobe. They press downward and encroach on the dorsal visual fibers, producing hemiopic defects. Pressure, papillo-edema, is often present.

Tumors which start in the cortex produce at the beginning color and figure hallucinations. Vascular changes and thrombosis often result in softening in one or both of the occipital lobes. If in one lobe and the lateral part is affected, there may be no visual disturbance. If the tract or the visual cortex is involved, homonymous complete hemianopsia, quadrant hemianopsia, or multiple scotomata result.

When both mesial cortical surfaces are involved from a thrombosis of both posterior cerebral arteries, bilateral homonymous hemianopsia results. It may not be complete, often varying in size and shape.

When the entire visual cortex has been completely destroyed, persistent blindness results generally, though occasionally the macular field clears up. Color blindness often persists if the macular field clears.

These cases of bilateral blindness often have visual hallucinations. They are not conscious of their blindness. Their optical memory is preserved. Whether a part of the field of vision remains or is all destroyed the subjective symptoms are the same. The patient at this stage has lost the sense of orientation and color.

Intracranial portions of the optic nerve and tracts may be disturbed by various diseases or by trauma; meningitis, aneurysm, arterial sclerosis, lues, tumors of the brain, and apophyseal growths.

Sclerosed vessels at the lateral angle of the chiasm by a pressure on the underlying nerve fibers may produce bilateral hemianopsia. Aneurysm may divide the chiasm and produce bitemporal hemianopsia.

Invasion of the brain by unicellular micro-organisms from infectious diseases produces acute cerebrospinal or acute purulent meningitis and disturbed vision through optic neuritis by involvement of the cortex or chiasm.

Basal meningitis is prone to give choked disc, paresis of ocular muscles, and iridoplegia. Hemianopsia with acute meningitis points to brain abscess. In post-mortem findings exudates about the chiasm are frequent where there has been sec-

ondary atrophy. Serous meningitis gives brain hydrops (hydrops nervi optici). Pressure on the hypophysis or chiasm often gives symptoms of hypopituitarism from severe distension of the third ventricle. Even extrinsic growth may give the same symptoms.

Syphilis shows a predilection for the chiasm (chronic vascular meningitis). Generally, however, the chorioretinitis with the optic lesion points to the cause, and with these cases a history of previous flitting paralysis of the third, fourth, and even sixth nerve is given. These paralyzes often antedate the optic lesion many years. The changes in the field are various and complex, especially when the optic nerve and tract are affected in addition to the chiasm; there may be a relative scotoma, monocular-temporal hemianopsia, bitemporal hemianopsia, temporal hemianopsia with blindness in one eye, blindness in one eye with nasal hemianopsia of the other, or blindness in both eyes, which only very exceptionally remains permanent. Cerebral syphilis or chiasmal syphilis shows variations of vision, reaching to complete blindness. It is very important for a differentiation of diagnosis from tabes and paresis, where the loss of vision continues steady and is final. Intensive treatment used with chiasmal syphilitic blindness restores vision; hence, if in doubt, always use intensive treatment. In chiasmal syphilis there are generally intense headache, vomiting after excitement, and stupor, but insomnia also. Diabetes is often present. In brain lesions involving the cavernous sinus there occur (on account of the latter's proximity to the sphenomaxillary sinus) ptosis, dilated pupil, suspension of accommodation, and convergent squint. These lesions are generally unilateral.

THE PUPIL

This study would be incomplete without a word on differential diagnosis of pupil conditions that occur with diseases that accompany optic nerve change. When the pupils are unequal it is necessary first to designate which is the *normal* pupil. This is a simple procedure. Measure the pupils and drop one drop of a 5 per cent solution of cocaine in each eye. Now when a drop of a 5 per cent solution of cocaine is placed in an eye, one of three things occurs: either there is no dilation, or a very excessive dilation, or a normal (medium) dilation.

When the instillation is followed by a normal dilation, that pupil is normal; in anisocoria one

will show either no dilation or excessive dilation and that one is pathologic.

The following formulæ for pupil diagnosis are useful:

If the large pupil (+5% solution of cocaine) shows no dilation there is excitation of the dilator fiber.

If the large pupil (+5% solution of cocaine) shows very great dilation there is paresis of the third nerve.

If the large pupil (+5% solution of cocaine) shows no dilation use a 1% atropine solution.

If the small pupil (+5% solution of cocaine) shows no dilation there is paralysis of the dilator fibers.

If the small pupil (+5% solution of cocaine) shows mild dilation it is normal.

If the small pupil (+5% solution of cocaine) shows no dilation use a 1% atropine solution, and if no dilation there is paralysis of the sympathetic, as in tabes.

If adrenalin solution produces mydriasis in myosis there is a lesion of the sympathetic nerve.

Both pupils may be absolutely parietic to light and accommodation. This points to cerebral lues rather than to tabes or progressive paralysis, where the reflex iridoplegias are more common.

Convergence often shows some pupillary reaction, to the careful observer, where there is marked myosis.

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MISCELLANY

CARL J. RINGNELL

Dr. Ringnell was born at Vissefjerda, Sweden, June 3, 1864, and died in Minneapolis on June 2, 1920, aged 56.

He came to America when 18 years old and entered Gustavus Adolphus College. After completing his course there he attended the University of Minnesota Medical School. He was graduated in 1896, and began practice at once.

For many years Dr. Ringnell was a member of the State Board of Medical Examiners, serving as secretary of the board. He was one of the founders and former president of the Odin Club, was a life member of the Minneapolis Athletic Club, and belonged to the Knights Templars. He was a Fellow of the American College of Surgeons, a member of the county and state medical societies and the American Medical Association. He was one of the founders of the Swedish Hospital and a member of its surgical staff until his death.

JOHN WARREN LITTLE

Dr. Little was born September 21, 1859, at South Charleston, Ohio, and died in Minneapolis on June 5, 1920, aged 61.

In 1883 he was graduated from Jefferson Medical College, Philadelphia, and the same year came to Minneapolis, where he practiced continually until his death. He took active and prominent part in the civic affairs of the city, being a member of the Civic & Commerce Association and the Minneapolis Club. Other organizations to which he belonged were the LaFayette Club, the Elks, the Scottish Rite Masons and the Hennepin Avenue Methodist Church.

During the war Dr. Little was a member of the medical section of the state committee of the Council of National Defense, and was often called to Washington for official conferences.

He was a former president of the Minnesota Academy of Medicine, the Hennepin County Medical Society, the Minnesota State Medical Association; was a member of the American Medical Association, and was a Fellow in the American College of Surgeons, of which organization Dr. Little was a charter member.

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DOCTOR JOHN WARREN LITTLE

Minneapolis, Minnesota, and the Northwest have lost by death one of our most conservative and experienced surgeons. The death of Dr. Little was a great shock to his many friends and acquaintances. They looked upon him as a man of fine physique who was likely to work on for many years, and they found, much to their sorrow, that he, like others, contracted an illness which ended in his death within a brief time.

Dr. Little was very strong in his friendships, a man of very great tenderness and sympathy, not only for the members of his profession, but for his friends and patients. He was a true physician, and in his work his first and best thought was what is best for the patient. He operated only when he felt the operation would be the right thing to do. The writer knows of many instances where Dr. Little had been called into consultation where, in the judgment of the attending physician, an operation seemed advisable, only to be confronted by this man's careful investigation and his wise counsel to wait and perhaps not operate at all.

During the time he was on his death-bed he was continuously talking of his experiences, and he was in constant touch with his friends and patients. He felt the warmest interest in their welfare, and he was keenly alive to what they were doing, how they were prospering, and how they were progressing. Dr. Little's sympathies

often added very materially to his work, and his methods very often were of the old-time type, that is, he would see anyone and everyone, if it were possible, without considering his own physical state. They even carried him so far that he thought of his patients who were more or less dependent upon him, looking into the future for their welfare, and within twenty-four or thirty-six hours before his death he had arranged for the care of an elderly man whom he had known for many years, a charity patient. This was the keynote of Dr. Little's character, and was the full-sounding note of his great success, a man alive to the interests of others, too much so, perhaps, but still a man full of real humanity.

Dr. Little was called many years before his natural time, and yet who would call him back after knowing what he had accomplished.

He was born in 1859, in South Charleston, Ohio, and graduated at Jefferson Medical College in 1883. Shortly after his graduation he came to Minneapolis and began the practice of medicine associated with his life-long friend, Dr. Woodard. He had the usual ups and downs of the newly arrived medical man without experience, but he was quick to see his advantages and was alive to the fact that he was on the threshold of the practice of medicine.

For a number of years he, like the rest of us in the early days, walked his rounds, then finally rode on the horse-cars, and, later, being extremely fond of horses, he acquired a team. In the early days he was known as a lover of fine horses, and the writer remembers seeing him drive behind a span of well-bred horses, which were kept in the finest condition.

He soon found that he had to give more of his time to his practice, and he entered into the field of surgery, and for twelve years was a member of the surgical staff of the University of Minnesota. Dr. Little prepared himself by study abroad and in this country, and he was a persistent visitor to clinics in which the best surgery was performed. He has been president of all the medical societies of Minneapolis, such as the Hennepin County Medical Society, the Minnesota Academy of Medicine, and of the Minnesota State Medical Association. Naturally, he was a Fellow in the American College of Surgeons and was one of its charter members. He also belonged to the usual clubs and fraternities.

Some years ago Dr. Little saw the necessity of a private surgical hospital. He established Hillcrest Hospital, and has since then been at its head. He surrounded himself with very able

men who not only assisted him in his work, but who were given positions of responsibility and authority by Dr. Little in his large-handed way. To go into his hospital is like going into the intimacy of a private place where everyone is on an almost equal footing, and everyone loved the head of Hillcrest Hospital.

Dr. Little probably had as many friends as any man we know, both medical and lay men, and they all feel the same keen sorrow at his death. They all will miss him until they themselves have passed away. One of the last of his courteous acts was that of writing a note to *THE JOURNAL-LANCET* while spending a few hours in Kansas City on his way South. He was not well at the time, and the trip was an unfortunate one, inasmuch as it seemed to precipitate the infection which has been slowly gathering. After starting on the trip he recalled the fact that he wanted to write to *THE JOURNAL-LANCET*, and the note published in our Fiftieth Anniversary Number (June 1) was probably one of the last things he wrote. It shows his thoughtfulness, his desire to leave nothing undone in which he was interested, and his letter of appreciation was very thankfully received by the editor of the paper. It was accompanied by a little explanatory note as to its being written in haste.

DOCTOR CARL JOHN RINGNELL.

The death of Carl John Ringnell, M.D., F.A.C.S., which occurred June second at the Swedish Hospital in Minneapolis, marks the end of an unusually successful career in general surgery, remarkable for its consistent development along sound, conservative lines.

It seems the tragic irony of fate that so many men skillful in the art of prolonging human life should themselves fail to benefit from the undoubted widespread fruits of their efforts. The unexpected taking off of men in the medical profession at the age when they ought normally to be in their prime is becoming so common that it has ceased to alarm us; yet we cannot avoid halting for a moment as we hurry on towards the end of our own brief careers and ask: What is the cause? The answer is found in the fact that the lives of men and women today cannot be measured in terms of years: they must be measured in terms of work accomplished or service performed, if we are to get a correct perspective of their length and breadth.

The late Dr. Ringnell is a notable example of this fact. Dead at the age of 56 years, he was

just past the stage which we call middle life. Graduated in medicine in 1891, he had been engaged less than thirty years in the practice of his profession. Measured by volume of work performed, however, it may be said that he died at a ripe old age. Few men in Minneapolis enjoyed a larger practice, either in number of patients or character of work.

Locating here at the close of a period of heavy immigration into this community of a substantial class of new citizens of the Swedish nationality, and being himself of Swedish birth, he quickly became the medical mentor of this industrious, thrifty, and appreciative portion of our population. Possessed of more than ordinary mental equipment and a keen desire for knowledge, he applied himself intensively to his own development, and within a few years achieved more than local recognition as a surgeon. Hampered at that period, like many of his colleagues, by the lack of hospital facilities, Dr. Ringnell became one of the prime factors in the movement which resulted in the organization of the Swedish Hospital, early in 1898. From that time on his position was assured and the growth and development of his surgical practice was simultaneous not to say synonymous with that of the hospital. The steady, consistent growth of this well-known institution is in no small measure due to the skill, energy, and perseverance of Dr. Ringnell. For twelve years he served as a trustee of the Hospital, and on his retirement from the board presented it with a free bed endowment.

Dr. Ringnell was for fifteen years a member of the surgical staff of the Minneapolis City Hospital. For a number of years he was a member of the Minnesota State Board of Medical Examiners and served as its secretary. In his capacity as executive officer of the board he enforced the laws regulating medical licensure and practice in the state, and did much to rid the state of quacks and medical impostors.

A critical estimate of Dr. Ringnell would not fail to give him credit for ability, honesty, sincerity, a high degree of skill, and a true scientific sense. He did his work with a degree of care and painstaking thoroughness that is only too rare in these days of striving to do the spectacular. His chief fault was his reticence concerning his work. Naturally modest, he became positively timid when urged to publicly present his rich and varied material and experiences. He was a wholesome man, a fine personality.

Had he, in addition to his many admirable traits, possessed the faculty of being able to present the results of his work in the clinical lecture room or in contemporary medical literature, his contribution to medical knowledge would doubtless have been considerable. He worked hard and incessantly, persistently working alone, maintaining to the end his policy that whoever sought him because of his reputation as a surgeon should receive his personal service. He might have built up a considerable clinical corporation upon his personal name and fame, but he detested commercialization in any form of a science which to him was sacred.

The outstanding marks by which Carl John Ringnell will be remembered by those who had the good fortune to know him are his native simplicity, his sterling honesty, and his loyalty to the highest ideals of the profession. His passing leaves a real void in the ranks of first-rate surgeons in this state.

REPORTS OF SOCIETIES

MIDSUMMER MEETING OF THE SOUTHERN MINNESOTA MEDICAL ASSOCIATION JUNE 28TH AND 29TH

No other minor medical society in the Northwest presents so excellent a program as the Southern Minnesota Association, and rarely is the entertainment of physicians and their wives so carefully looked after. The forthcoming meeting will be equal in both respects to any past meeting of this ably managed association.

The train service is good, and the people of Fairmont will do all in their power to make visitors comfortable while in the city.

PROGRAM

MONDAY AFTERNOON, JUNE 28,
2:30 o'clock P. M.

1. Fracture Sprain (Lantern)
DR. A. E. SOHMER, Mankato, Minn.
Discussion:
DR. A. R. COLVIN, St. Paul, and
DR. M. H. CREMER, Red Wing.
2. Ocular Imbalance (Heterophoria)
DR. J. H. JAMES, Mankato.
Discussion:
DR. JOHN F. FULTON, St. Paul, and
DR. JEHIEL W. CHAMBERLIN, St. Paul.
3. A Consideration of Late Sequelæ Following Gastro-enterostomy, with Special Reference to Gastrojejunal Ulcer—
DR. GEORGE EUSTERMAN, Rochester.
Discussion:
DR. HUGH S. WILLSON, Minneapolis, and
DR. E. L. TUOHY, Duluth.

4. Mechanics of Digestion—
DR. CHARLES N. HENSEL, St. Paul.
Discussion:
DR. C. P. ROBBINS, Winona, and
DR. R. M. WILDER, Rochester.
5. Chronic Interstitial Nephritis in Children—
DR. ROOD TAYLOR, Minneapolis.
Discussion:
DR. L. G. ROWNTREE, Minneapolis;
DR. N. O. PIERCE, Minneapolis, and
DR. R. N. ANDREWS, Mankato.
6. Treatment Acute Septic Arthritis—
CAPT. VANDERVELT, La Panne, Belgium.
Discussion:
DR. A. A. LAW, Minneapolis, and
DR. WALLACE COLE, St. Paul.

EVENING SESSION

MONDAY EVENING, JUNE 28, 1920,
6:30 o'clock P. M.

ADDRESS OF WELCOME MAYOR E. J. EDWARDS
RESPONSE - - DR. W. A. JONES, Minneapolis
INVOCATION REV. F. S. FREDRICKSON, Fairmont
BANQUET

7. Differential Diagnosis of Bronchiectasis, Lung Abscess and Encapsulated Empyema (Lantern)
DR. C. P. HOWARD, Iowa City, Iowa,
Professor of Medicine, University of Iowa
Discussion:
DR. C. A. HEDBLOM, Rochester, and
DR. J. P. SCHNEIDER, Minneapolis.
8. Methods of Education in South America, with Observations on the Universities, Hospitals, Surgical Clinics and Surgeons—
DR. WILLIAM J. MAYO, Rochester.
9. Diagnosis and Treatment of Acute Anterior Urethritis (Lantern)—
DR. LEWIS WYNE BREMERMAN, Chicago, Ill.
Discussion:
DR. S. E. SWEITZER, Minneapolis, and
DR. PAUL COOK, St. Paul.
10. Ankylosis of the Jaw (Lantern)—
DR. HARRY P. RITCHIE, St. Paul.
Discussion:
DR. G. B. NEW, Rochester, and
DR. A. T. MANN, Minneapolis.

TUESDAY, JUNE 29, 1920,
8 o'clock A. M.

11. Diabetes Mellitus—
DR. L. G. ROWNTREE, Minneapolis,
Professor of Medicine, University of Minn.
Discussion:
DR. JAMES GILFILLIAN, St. Paul, and
DR. S. MARX WHITE, Minneapolis.
12. Pre- and Post-operative Medical Considerations in Diabetes with Surgical Complication—
DR. D. M. BERKMAN, Rochester.
Discussion:
DR. HARRY B. ZIMMERMAN, St. Paul.

13. Tuberculosis of the Knee-Joint in Children—

DR. M. S. HENDERSON, and
DR. H. W. MEYERDING, Rochester.

Discussion:

DR. EMIL S. GEIST, Minneapolis, and
DR. A. J. GILLETTE, St. Paul.

14. Sensory Changes in Pernicious Anemia—

DR. ARTHUR S. HAMILTON, Minneapolis.

Discussion:

DR. H. W. WOLTMAN, Rochester, and
DR. E. M. HAMMES, St. Paul.

15. The Organization of Medical School and Hospital Facilities for Graduate Medical Education—

DR. L. B. WILSON, Rochester.

Discussion:

DR. E. P. LYON, Minneapolis,
Dean of the University Medical School.

NEWS ITEMS

Dr. O. H. Urstad has moved from Kiester to Minneapolis.

Dr. A. M. Adsit, of Hastings, died recently at the age of 63.

Dr. W. W. Brown has moved from Cottonwood to Marshall.

Dr. J. L. Miller has moved from Spearfish, S. D., to Newell, S. D.

Dr. James O. Lee has moved from Pierre, S. D., to Mt. Vernon, S. D.

Dr. J. W. Towey has moved from Langdon, N. D., to Cannon Falls, Minn.

Dr. Alfred Dean has moved from Grand Forks, N. D., to Grand Rapids, Mich.

Dr. Geo. H. Richards has moved from Clear Lake, S. D., to Watertown, S. D.

Dr. C. C. Hoagland, of Veblen, S. D., is in New York City, doing postgraduate work.

Dr. Ralph G. Willy, of Kimball, S. D., has been doing postgraduate work in Chicago.

The North Dakota State Medical Association is holding its annual meeting at Fargo, N. D.

Dr. A. J. Henderson, of Kiester, was married last month to Miss Hazel Olson, of Estherville, Iowa.

Dr. J. E. Power, of Milwaukee, Wis., has become a member of the Rood Hospital staff at Hibbing.

Dr. J. E. McCoy, of Shell Lake, Wis., has purchased the practice of Dr. W. Stuart Leech, of Roseau, Minn. Dr. Leech retires from practice, and will go to Florida and enter the fruit business.

Dr. G. L. Gates has moved from Winona, where he has practiced for a number of years, to St. Paul.

Dr. H. G. Pease, who was the first physician to locate at Onida, S. D., recently died at Tacoma, Wash.

Dr. A. A. Meyer, who formerly practiced at Osakis, has become associated with Dr. P. A. Hilbert, of Melrose.

Dr. W. J. Taylor, of Pipestone, was elected last week medical director of the Minnesota Department of the G. A. R.

Dr. John Dimon, of Three Forks, Mont., has been appointed superintendent of the Northern Pacific Hospital in that city.

Dr. W. R. Humphrey, of Stillwater, has been appointed county physician of Washington County to succeed the late Dr. Wells.

Dr. N. P. Baldwin, formerly of Casselton, N. D., who spent the winter in Minneapolis, is now settled in his new location, Fargo, N. D.

Dr. R. Edwin Morris, of the Medical School of the University of Minnesota, was recently married to Miss Mattie L. Gordon, of Minneapolis.

Dr. A. Guillixon, who recently moved to Albert Lea, has returned from Chicago where he has been doing postgraduate work and has begun practice.

The physicians of West Duluth propose to cut out evening office hours hereafter, and to have a part of the working hours of each day to call their own.

Dr. J. H. Spencer, who was formerly Government physician in the Indian service at Ashland, Wis., recently died at Tacoma, Wash., where he moved twenty years ago.

Dr. J. P. Guilfoyle, of Stephen, has sold his practice to Dr. Roy, of Argyle. Dr. Guilfoyle will go to New York for post-graduate work, and will then locate elsewhere.

Within the past two weeks Minneapolis has lost two of her best known and most highly respected surgeons, Dr. John Warren Little and Dr. Carl J. Ringnell. Further notices of these highly respected men appear elsewhere in this issue.

Dr. James R. Scott, A. B., University of California, 1908; M. D., Cooper Medical College (at present Medical Department of Leland Stanford University), 1912; Clinical Laboratory in San Francisco, two months; anatomist and micro-

scopist at Army Medical School at Washington, D. C., has been elected assistant professor of Pathology and Bacteriology in the College of Medicine, State University of South Dakota.

The staff of St. Raphael's Hospital of St. Cloud has been reorganized, and the hospital will be conducted along the lines laid down by the American College of Surgeons. Drs. C. B. Lewis, C. S. Sutton, and J. H. Beaty are the officers of the staff.

Dr. George R. Dunn, of Princeton, has moved to Minneapolis, and is associated with Dr. Harry B. Dornblaser, a 1914 graduate of Johns Hopkins. They have offices in the Pillsbury Building. Their practice is confined to surgery, gynecology, and obstetrics.

Dr. Francis J. Adams, of Great Falls, Mont., was killed in an automobile accident on June 2d. Dr. Adams was a graduate of the Georgetown University School of Medicine, Washington, D. C., with the class of '81, and was 61 years of age at the time of his death.

Dr. A. J. Somers, of Portland, N. D., soon leaves for Europe to specialize in eye, ear, nose, and throat work, to which he will confine his practice upon his return. He expects to be absent a year. Dr. R. M. Parker will have charge of his practice during his absence.

Dr. E. V. Bobb, mayor of Mitchell, S. D., proposes to show the citizens of Mitchell what can be done to improve the city's health conditions, especially in the control of the spread of contagious diseases, in the absence of good state laws. Dr. Bobb is a man of action, and his work will be well worth watching.

The Regents of Education of South Dakota at their last meeting at the State University in Vermilion, S. D., passed a resolution that every state educational institution having a ladies' dormitory should employ a legally registered trained nurse to have supervision of the health of the young women in such institution.

Dr. John Adams, of Aberdeen, S. D., was re-elected examiner of young men in the Inter-Departmental Department of Hygiene of the Northern Normal and Industrial School at Aberdeen, and Dr. Goldie Zimmerman, of Sioux Falls, was re-elected examiner of young women and instructor in health in the same department.

The medical men of Willmar, with Drs. Oscar Daignault and C. L. Scofield, of Benson, and Dr. Hans Johnson, of Kerkhoven, tendered Dr. Christian Johnson a farewell banquet last month

upon the eve of his departure to Everett, Wash., his future home. Dr. Johnson has been for many years a vigorous writer on matters medical and has always taken an active part in professional politics.

The Montana State Medical Association will hold its annual meeting on July 14th and 15th in Helena. The officers of the Association this year are as follows: President, Dr. E. M. Larson, Great Falls; and secretary, Dr. E. J. Balsam, Billings. The Montana State Health Association will hold its annual meeting in the same city on July 12th and 13th; and the State Nurses' Association will hold annual meeting on July 14th and 15th.

Dr. Reginald Alex Cutting, from Tufts Medical School, Boston, has been appointed acting professor of physiology at the University of South Dakota, to take the place of Prof. Maurice H. Rees, who has been granted a year's leave of absence to complete his medical work. Dr. Cutting received the degrees of A. B. and A. M. from Harvard, and the degree of Ph. D. in physiology from the same university. He attended Harvard Medical School three years.

Major General Leonard Wood last week conferred upon Dr. C. H. Mayo the distinguished service medal granted Dr. Mayo some time ago.

The honorary degree of Doctor of Laws was conferred last month by the University of Missouri upon Dr. E. P. Lyon, dean of the Medical School of the University of Minnesota. Dr. Lyon was the dean of the Medical School of the University of Missouri before he came to Minnesota. He delivered the recent Commencement address at the University of Missouri.

Some time ago the Regents of Education of South Dakota officially established a school of Postgraduate Instruction in Public Health Nursing for the benefit of graduate nurses who wish to take up this branch of nursing. Miss Margaret Hughes, of New York City, was elected director of this department. Miss Hughes is a graduate of the Boston City Hospital, a post-graduate student of the Phipps Institute, Philadelphia, and at present is just completing her graduate work in the Teachers College, a department of Columbia University, New York City.

The midsummer meeting of the Red River Valley Medical Society will be held at Warren, July 8. A full day's program of general interest is being arranged for. There will be morning and afternoon sessions. Preceding the morning ses-

sion operative and bedside clinics will be given at the Warren Hospital. The regular Society banquet will be held at the Hotel Warren at noon. Physicians are urged to take their ladies, for whom suitable entertainment will be provided. Those desiring to attend the meeting are requested to notify the Secretary, Dr. H. M. Blegen, Warren, Minn.

The staff of the newly formed clinic at Duluth is as follows: Dr. Benjamin F. Davis, who has been an associate professor in surgery in Rush, and on the editorial staff of the *Journal of the A. M. A.*; Dr. Veeder N. Leonard, chief resident surgeon of Dr. Howard A. Kelly, of Johns Hopkins, for five years; Dr. Arthur J. Hudarle, chief of the dental department; Dr. Lloyd L. Merriman, chief of the department of internal medicine; Dr. C. H. Schroeder, chief of the department of pediatrics; Dr. Arthur H. Schwartz, chief of the department of dermatology and urology; and Dr. F. M. Turnbull, chief of the department of eye, ear, nose, and throat diseases. The new building for the Clinic will be ready for occupancy in September.

LOCUM TENENCY WANTED

Locum tenency in North Dakota wanted for July or August, or will consider good permanent location. Address 355, care of this office.

HIGH-GRADE X-RAY TECHNICIAN WANTED

A firm of physicians and surgeons in Montana will give permanent employment at good wages to a high-grade x-ray technician. Address 345, care of this office.

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A physician of ten years' experience in general practice, and the highest of references, desires a position as locum tenens for a month or longer. Address 357, care of this office.

MINNEAPOLIS SANITARIUM FOR SALE

The prettiest and best-paying sanitarium in the Northwest is offered for sale for the best of reasons. Telephone Hyland 0152 or call at the Sanitarium, corner Plymouth and Penn Aves., Minneapolis.

LOCUM TENENS POSITION WANTED

A University of Minnesota graduate who has finished his internship in the City Hospital of Cleveland, Ohio, desires substitute work for the summer somewhere in the Northwest. Address 358, care of this office.

BOOKS AND ELECTRICAL APPARATUS FOR SALE

I offer for sale my late husband's books (about 200 vols.), sectional bookcases (12 sections), and a complete Campbell chair and Model "E" X-ray High Frequency Coil with accessories. For full particulars call on Mrs. Ida Blomburgh, 1910 Columbus Ave., Minneapolis (Telephone, Automatic 51651).

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Unopposed village and country practice, amounting to over \$4,000 a year, for sale. Centrally located. Nearest opposition is 8, 12, 14, and 18 miles. Collections, 99 per cent. A few fixtures and practice go for \$500 cash. Will thoroughly introduce. Address 354, care of this office.

LOCATION OR AFFILIATION WANTED

A young physician with considerable surgical experience, who has spent the past year since leaving war service in a surgical hospital, seeks an affiliation with a good man in the country or will buy a country practice. Address 350, care of this office.

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A new modern office in a fine and rapidly growing residence district of St. Paul can be had for \$15.00 a month. Two or three colleges are near at hand, and physicians in this district find many patients in the nearby and fine commercial district. Address 719 North Hamline, St. Paul, or telephone N. W. Midway 0173.

SURGICAL ASSISTANTSHIP WANTED

A physician with fifteen years of general work, having done considerable emergency surgery for milling and mining companies, desires an assistantship to a busy surgeon. A living salary for the first year would be satisfactory. An American, aged 42, married, good health, habits good, graduate University of Minnesota. Have specialized somewhat in tendon work, particularly of the hands and fingers. Address 356, care of this office.

GOOD MINNEAPOLIS OFFICE FOR PHYSICIAN OR DENTIST FOR RENT

For rent by July 1 office room in modern building for doctor or dentist. Rent reasonable. Location, Thirty-first Street and Hennepin Avenue (3047) in the best section of City. Phone Kenwood 7065 or write Mrs. A. Quam at above address.

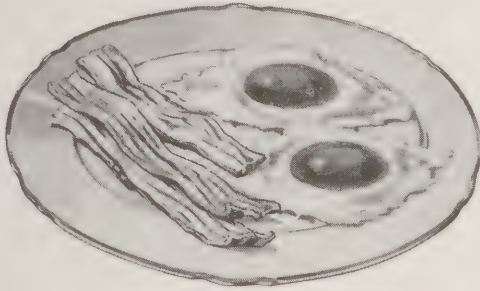
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THE WALMAN OPTICAL CO. (INC.)

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Their headquarters are on the second floor of the P. & S. Building (9th and Nicollet), Minneapolis, and they invite correspondence and personal calls at their offices. They have a branch house in Grand Forks, N. D.

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The manufacturers are generous with samples for physicians who wish to try it out in special cases, and our readers need not hesitate for a moment about asking for samples, which are freely furnished.

AN INCOME RECORD BOOK

The United States Government demands an *exact* statement of every physician's income, and will not take guesswork. It wants facts; therefore every physician must present hereafter the facts concerning his income, and also concerning his *earnings*, which are different from cash income.

Messrs. Noyes Bros. & Cutler, of St. Paul, are offering a complete \$5.00 Record good for an entire year for \$3.00. Every physician without a first-class record book should have a copy of Greenwood's work which this wholly dependable house offers at a reduced price.

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Dr. Byron M. Caples, the medical director, and his able superintendent, Dr. Floyd W. Alpin, of the Waukesha Sanitarium for the care and treatment of nervous patients, has done a notable work in this line. The equipment of the institution is well-nigh perfect, while

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It is put up in liquid and powder form, and generous samples will be sent free upon request made to the Campho-Phenique Chemical Co., St. Louis, Mo.

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RENAL DISEASES, THEIR SYMPTOMS AND PROGNOSIS

The above is the title of a booklet just issued by Messrs. Reed & Carnrick, of Jersey City, N. J., one of the most reliable pharmaceutical manufacturing houses in America, as well as one of the oldest. The booklet has been prepared by specialists of long experience in this line, and presents the subject in detail and in a way that is exceedingly helpful.

Booklets of this kind contain a large amount of information that is not found in every text-book, and so they become of unusual value. This pamphlet will be sent free to any physician requesting it.

THE DOSAGE OF DIGITALIS BY THE EGGLESTON METHOD

The principle of pushing the administration of digitalis within a short period until the maximum therapeutic effect is produced has found favor during the last few years. Many physicians have adopted the idea in a modified form; thus, some prefer to administer one-half or one-fourth the large doses prescribed by the Eggleston method.

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Correspondence is invited from all medical men. For containers or information address The Deeds Laboratories, Pillsbury Building, Minneapolis.

AN IMPORTANT CORRECTION ALKALOL

The time is at hand when the physician will be called upon to prescribe something for the treatment of irritation or inflammation of mucous membranes, especially those of the eye, nose, and throat. There is a growing tendency upon the part of most observant physicians to question the value of many preparations advocated for use as mouth-washes, nasal douches, etc. There are several reasons for such an opinion. In the first place, that, as should be well known, the best possible antiseptic solution for use on a mucous membrane is a normal secretion of the cells that line it. The effect of many so-called antiseptic solutions is to overstimulate the cells and consequently prolong the catarrhal condition resulting from the inflammation. Irritated, overstimulated, and consequently exhausted mucous membrane cells need to be fed. They are deficient in certain physiological salts which are absolutely necessary. To feed the cells by such physiological salts, supplied in a solution which will be not only soothing and healing, but of proper alkalinity and correct salinity, is to secure satisfactory results. Alkalol accomplishes this, because Alkalol is a solution espe-



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cially intended for use on mucous membranes, which feeds the cells instead of overstimulating them and which, therefore, helps the cells to help themselves. Alkalol is also of great value in the treatment of irritation or inflammation of the skin. Many physicians use Alkalol and find it eminently suitable. To any physician who does not know or who has not used the preparation, samples will be sent gratis on application to the Alkalol Company, Taunton, Mass.

PHYSICIANS' EXCHANGE.

The Physicians' Exchange is a telephone service bureau for physicians and patients, mainly in the Twin Cities; but it is especially valuable to country physicians seeking to find city physicians, such service to the country physician being free.

The Exchange was conducted at considerable loss for several years, but it is now self-sustaining, and it is rapidly growing, its value to physicians having been fully recognized by our leading medical men. Its motto is *service*, and service it has rendered to the profession unstintedly, with the result that physicians are rapidly becoming members of the Exchange. A telephone call to Midway 3760 will obtain full information concerning this service.

CARDIAC FUNCTIONAL DISORDERS

The consensus of opinion among active physicians seems to be that there has been, during the past year or so, a great increase in the number of cardiac functional disorders. A prominent sequela of the recent epidemic of influenza is a depressed action of the heart accompanied by a great deal of physical weakness. This is apparently functional, and is not accompanied by any

evidence of organic lesion. Its treatment is best effected by the administration of therapeutic agents which strengthen and regulate the heart's action, and for this purpose nothing is so good as Anasarcin Tablets, which contain one of the active principles of squill, a dependable and safe cardiac tonic. Many physicians who already know and use Anasarcin tablets in the treatment of dropsy will, no doubt, be prompt to use the tablets in the treatment of cardiac neuroses, and it is well to bear in mind also that this preparation is of decided value in the treatment of Exophthalmic Goiter.

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Our readers, we think, will find the River Pines Sanatorium, of which Dr. J. W. Cook is medical director, at Stevens Points, Wis., an almost ideal place for a short or long stay for their patients; and we are sure all physicians will do well to become acquainted with the work of this institution.

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There is a distinct advantage in using cascara sagrada in the treatment of chronic constipation, for it stimulates the muscular structure of the intestine, thus promoting normal peristalsis. It activates the intestinal follicles, thus augmenting glandular secretion; moreover, this stimulating effect is mild, not

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The Official Journal of the
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PUBLISHED TWICE A MONTH

VOL. XL

MINNEAPOLIS, JULY 1, 1920

No. 13

TECHNIC OF NERVE SUTURE*

By J. F. CORBETT, M.D., F.A.C.S.
MINNEAPOLIS

In the repair of nerve wounds several important factors have to be taken into consideration. Among these is the time of operation, important on account of both the tendency early operation has to light up latent infections and to allow sufficient time for spontaneous regeneration to occur under postural and mechanical treatment. The usual rule is to operate three months after healing becomes complete, provided careful and oft-repeated neurological examination does not show any signs of spontaneous recovery. As to the method to be employed, direct suture offers the best chance for recovery. All other methods are doubtful and never should be resorted to if direct suture can be done. When impossible by any device to contact the nerve ends the only other logical procedure is the insertion of autogenous multiple sensory nerve grafts obtained from some other part of the body. The radial and musculocutaneous branches, when so used, sometimes give some measure of success in clinical work. In animal experiments the results were almost perfect in a series of fifteen animals. It is possible that homogeneous preserved grafts may offer something in the future. The results of this procedure are not as yet known. Heterogeneous alcohol-preserved grafts are being investigated at present, but give doubtful results even in animal experiments. I have seen but one successful tubulization with fascia among a score of failures. All other devices, such as nerve flaps, agar

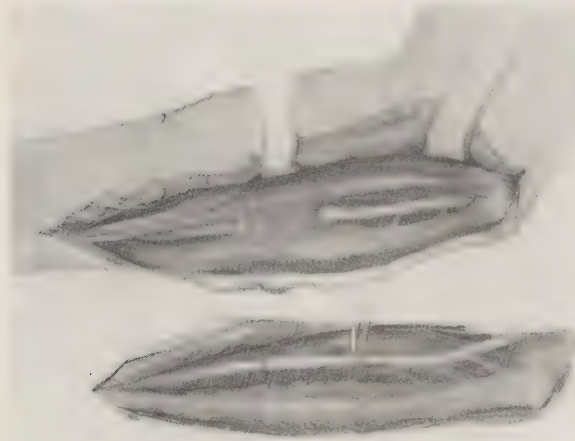
tubes, catgut bridges, bone tubes, formalized arteries, are to be condemned.

When we come to suture a nerve we are confronted by a host of problems. Failure to observe any one of the essential principles will result in no regeneration or return of function. Usually in healed gunshot wounds, or in wounds where infection or hemorrhage has occurred, there is a great deal of scar tissue. This makes dissection difficult, not only because of scar tissue, but oftentimes the nerves are out of their anatomical course, having been displaced by the impact of the projectile or by drainage-tubes or packing. In addition, a cut nerve always retracts, and this retraction is increased by muscular action; therefore, in fresh wounds, even if infected, the cut ends of the nerve should be tied together, and proper splints should be used to inhibit muscular action. Repair of a nerve almost never follows this procedure, but displacement is prevented and it is possible to find the nerve, when subsequent suture can be properly performed. In case this has not been done, one must begin his dissection both above and below the point of scar in normal tissues. In making this dissection, fascial planes must be followed. After the nerves have been isolated, the ends should be traced into the scar, using every care to save branches and to preserve any intact funiculi. When the nerve has been so freed, all scar, if possible, should be removed, and the resulting raw surfaces in the muscle should be infolded so as to furnish smooth

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muscle planes for the sutured nerve to rest in. Hemorrhage must be controlled, and any free blood should be washed out with salt solution, heated to 120° F., as soon as it escapes. Hot water is in itself a good hemostatic for capillary oozing, and larger vessels should be clamped before they are cut, or avoided altogether. Blood in the tissues is a prolific cause of scar tissue. It is not enough to wait until the end of an operation before washing out blood, but this should be done before there has occurred time for fibrin to form. Fibrin once deposited is difficult to remove, and usually is the beginning of scar tissue.

When the bed for the sutured nerve has been made, the two ends of the nerve may be grasped with artery forceps. This does no harm because



The upper picture shows a dissection in fascial planes revealing the ulnar nerve severed and bound in a mass of scar tissue.

The lower picture shows the scar tissue removed, the resulting raw surfaces in the muscle infolded, the nerve mobilized after splitting up the funiculus continuous with each branch, and the main trunk sutured.

these ends are only scar tissue. The extent of the intraneural scar tissue may be determined by rubbing the nerve with a probe. Scar tissue can be determined by this sort of palpation after a little experience. This scar has later to be cut away, but before doing so a catgut suture should be introduced. In introducing the guy-rope suture we must get behind all scar tissue in the nerve, and, in addition, it must be so placed that when it is drawn tight a proper orientation of the nerve will result. It is desirable to bring every corresponding funiculus into contact with its fellow. In plain words, the purpose of this suture is to avoid twisting the nerve. (The reader is referred to Stoffel for a description of the inner anatomy of nerves.) When the suture has been so placed the neuroma in the proximal end and

the scar in the distal end are removed by cutting the nerve across at a right angle with a cataract knife. After this has been done, inspection of cut ends will show whether all scar tissue has been removed. Scar tissue differs from normal or degenerated nerves in that scar has no fasciculæ, glistens, is homogeneous on section, and has few blood-vessels. The sectioned nerve presents areas like little masses of cooked sago.

When the nerve is sectioned free hemorrhage usually occurs from the intraneural vessels. This can be controlled by pledgets of cotton wet in hot salt solution. The rule is simply to allow them to lie in place, and not to handle the cut ends with anything. Rarely, ligation may be needed.

When the guy-rope suture is tightened, care should be taken barely to approximate the cut ends. A gap of a millimeter is preferable to any crushing of the nerve ends. The anastomosis is completed by introducing several fine sutures in the nerve sheath. Fine linen (1500 French) may be used. Six or eight interrupted sutures are introduced. These must be carefully placed so as to include nothing but the sheath. As careful approximation of the sheath should be obtained as is obtained in suturing the walls of blood-vessels. Ordinarily, before the ends of the nerve can be approximated, some device must be resorted to in order to recover the lost distance. Sometimes, as in the case of the sciatic nerve, a simple flexing of the leg will accomplish this, but in other cases a new and shorter path must be sought for the nerve. This is especially true in the case of the ulnar nerve. It would be a simple matter to slip the ulnar nerve over the external condyle were it not for the presence of important branches that are given off near the elbow. These stand in the way of extensive mobilization of the nerve. This difficulty may be overcome by lengthening the branches, which is accomplished by stripping the branches away from the nerve trunk. The branches run as continuous funiculi throughout the nerve trunk. When so stripped the nerve trunk can be slipped over the condyle, and the only change is that, when the nerve is pulled down, the direction of the branches is reversed. I have resorted to this procedure many times and never have seen any temporary or permanent loss of function to muscles thus supplied. The dissection must be done very carefully and with a sharp knife, exerting traction of the branches with a piece of tape.

After the nerve suture is complete the wound is closed. The fascia is closed with a few interrupted Lukken catgut sutures. These must be tied with artery forceps, as Lane's technic must be followed throughout. The skin is usually best approximated with silkworm-gut sutures. Strips wet in alcohol cover the cut, abundant gauze dressings protect the wound from external infection, and a strong plaster cast should be applied so as to maintain the limb in the optimum position for at least six weeks. At the end of that

time the limb is allowed to straighten out a little, when another cast is applied. At the end of two more weeks the patient is allowed to use his limb.

This prolonged immobilization does no harm provided that all raw surfaces in the muscles have been cared for, and hemorrhage and infection have been prevented.

In this work sharp-knife dissection is necessary. Clean-cut wounds heal; lacerated and contused tissues do not heal, and offer insurmountable difficulties in hemostasis.

ACUTE PERFORATIONS OF THE STOMACH AND DUODENUM*

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Among some of the most serious cases which we are called upon to treat, are those of the abdomen. This is due to the difficulty in recognizing the underlying condition, not only because of the multiplicity of organs contained within that cavity, but also because of the thickness of the abdominal wall, which tends to obscure the underlying pathology. This is true to a large extent when we come to consider acute perforations of the stomach and duodenum. Most of us are familiar with acute disturbances of the appendix followed by perforation, and we are invariably able to make a correct diagnosis; likewise, similar disturbances in the biliary tract resulting from acute inflammatory states in the wall of the gall-bladder or from stones that have taken on the "wanderlust," are so comparatively common that we are on the lookout for them. Acute perforations of the duodenum or stomach, though rather frequent, are, on the other hand, very often not recognized: the patient is treated for some other condition and very often with a fatal result.

The incidence of acute perforations of the upper digestive tract varies, but, quoting from Deaver, who says: "About 15 per cent of patients with ulcer of the stomach die from perforation, whereas, of those with duodenal ulcer, probably one-fourth will develop this complication." In other words, when we stop to consider that one-seventh to one-fourth of the patients with peptic ulcer will develop perforations, it behooves us to become familiar with the symptomatology and general appearance of

the patient, since early recognition is the key to success in treatment. To the abdominal surgeon, this advice is superfluous, since he is already familiar with these lesions and is awake to the possibilities, but to the general practitioner it should be a word of warning, for it is he who first sees the patient and it is he who must insist that operation is the treatment of choice. Perforation here, as well as in the appendiceal region, demands immediate care because of the difficulty in localization even though the duodenal and gastric contents are comparatively sterile. The extravasated material, tending to follow the course of least resistance, sinks by gravity into the pelvis, soiling everything from the upper to the lower abdomen and giving rise to a general peritonitis.

The seriousness of a perforation is dependent upon a number of factors, but the most essential are the type of the perforation, the location of the perforation, and the early recognition of the perforation. Of course, a chronic or subacute perforation, which takes place gradually, may give rise to no fulmination signs and the patient may not suspect anything seriously wrong, except for a steady increase of existing symptoms, which leads him to consult his medical adviser. An acute perforation, however, taking place without any premonition or warning, sets up a condition that may result in a peritonitis, with death in a short time. Then, again, the perforation may be located in such a position as to lead to an extensive extravasation into the whole peritoneal cavity, or it may be so close to the liver and pancreas as to be protected by the kindly as-

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sistance of these organs in walling off the process. Finally, it is dependent upon the person who first sees the patient, whether he recognizes the condition, or whether he covers up his ignorance by giving his patient morphine before he makes his diagnosis.

Early operation gives the best results. Those patients who come to the operating table before twelve hours have passed, ordinarily recover. Deaver¹ quotes Mayo as having three deaths in 16 acute perforations; and Robson, in collecting reports in 155 operations from various sources, gives a mortality of 66.66 per cent in all cases, regardless of the time after perforation. Of these cases, 61 were seen and operated on within twenty-four hours with 38 recoveries, giving a mortality of 37.7 per cent; 63 cases were operated on after twenty-four hours, with 11 recoveries, a mortality of 82.5 per cent; 31 were operated on at various unstated intervals, and 3 recovered, a mortality of 90.3 per cent, which totaled up gives a mortality of 66.66 per cent for the 155 cases. Ramstad, in speaking of his experience, says that patients operated on inside of twelve hours have a good prognosis, while those over forty-eight hours old give a poor prognosis with advisability for operation doubtful. Even without operation some patients recover, as will be seen from the following history:

J. R., male, aged 33, car-repairer; complaint, sore stomach.

The patient was well until August, 1914, when he began having epigastric pain two hours after eating with belching of gas, sour eructations, and food relief. In 1915 he had an appendectomy, with relief for six months, but at the end of that time, symptoms gradually increased until January, 1917, when one night he was seized by a severe attack of abdominal pain following the ingestion of a large amount of canned tomatoes. This lasted until 3 A. M., when he got up from bed, but all of a sudden he had another excruciating attack of pain in the upper abdomen to the left of the midline. The pain was so severe as to double him up completely. The doctor who saw him said he felt a mass in the epigastrium, and told him he had an "obstruction." Morphine was given for pain, hot applications were applied, and he was given a liberal amount of cathartics for four days, when his bowels moved slightly and he was informed by his attendant that his life was saved, as his bowels had moved. On the fifth day he was worse, but from that time he got better, until he was able to leave the house

at the end of six weeks. For five or six months he felt better, but then his symptoms recurred.

He entered the Warren Hospital on October 28, 1918, and was operated on October 29, 1918, for an old perforated gastric ulcer. Operation revealed the pyloric end of the stomach buried in a mass of adhesions, and a posterior gastro-enterostomy was done. Recovery was uneventful, and he was discharged on November 14, 1918. His present condition, at the end of eighteen months, is good.

Here we have a patient who was intensely sick and was treated for an acute intestinal obstruction by morphine and cathartics. From his history and from operative findings, he had an acute perforation of a gastric ulcer. This was followed by a paralytic ileus, Nature's way of localizing an acute inflammatory process. This man recovered despite the fact that he was being purged daily.

The presenting symptoms and appearance of a patient with an acute perforating lesion of the duodenum or stomach, when once seen, are rarely, if ever, forgotten. The patient is seized with a sudden excruciating pain in the epigastrium, so severe as to double him up and cause him to cry out in distress. He rolls from side to side with the thighs flexed on the abdomen, pressing his hands over the epigastrium to get relief from the pressure in the abdomen. Shortly afterwards he attempts to vomit, though he may not be able to raise anything, and, if he is successful, the vomitus may be bloody. The face and hands become cold and clammy as huge droplets of sweat break out. The pulse is small and rapid, and the respiration is short and labored. Attempts at history-taking are often unsatisfactory, though most patients give some evidence of previous digestive or dyspeptic disturbances. Questions are answered in monosyllables because of disordered respiration and the continuously increasing pain. Examination is not always satisfactory, as the patient cannot assume a position that aids you, but you can detect a board-like rigidity in the upper abdomen, which, as time goes on, tends to spread over the entire abdominal region. Tenderness is marked, so much so as to lead the patient to implore you to be careful if too much pressure is applied. Percussion reveals a tympanitic note over the region of the liver because of escaped gases. As distension increases the patient renews his efforts at vomiting, since he feels that, if he only could get rid of the gas, he would be relieved.

Fluid is poured out into the peritoneal cavity, and it gravitates to the flanks, where it is recognized as producing dullness to percussion.

This description may be simulated by any acute fulminating abdominal lesion, but, ordinarily, it can be differentiated from an acute appendicitis by previous symptoms and localization of pain and tenderness. Likewise, it may be confounded with an acute cholecystitis, but this is not so severe under ordinary circumstances. Conditions which can hardly be differentiated are perforations of the gall-bladder and an acute pancreatitis. These, however, are looked upon as surgical conditions, and, should exploration be undertaken and one of the other conditions found, the surgeon would not be very far wrong, for he could institute the required treatment through the same incision.

Not all cases seem to follow the typical description given. For instance, there may not be enough gas in the peritoneal cavity to obscure the liver dullness and this has been noted by Berg.² Furthermore, fluid in the abdomen is dependent upon the amount of material in the stomach, so one must consider the relation of symptoms to the time after the last meal, and this will serve as a guide as to whether there is any shifting flank dullness.

That early operation is the treatment of choice is universally agreed, but what is to be done after closing the perforation is a moot question. Most surgeons of today do a posterior gastro-enterostomy after closing the ulcer, in order to give the ulcerated area a complete rest, so as to favor early healing. Furthermore, they contend that, should the ulcer area lead to a stenosis when it is healed, there will be no tendency to gastric distension and other symptoms, since the gastro-enterostomy will act as a safety valve. In the last two cases of acute perforation that have come to us, Dr. T. Bratrud has resorted to jejunostomy after suturing the ulcer and covering it with an omental flap. Its advantages are, that it gives complete rest to the stomach and duodenum, thus permitting the perforated area an opportunity to heal, without subjecting the patient, who is oftentimes in poor condition, to the added risk of a gastro-enterostomy.

Fluids and nourishment are given through the jejunostomy tube as the patient's condition permits. On the first or second day after operation, 8 oz. of 2 per cent glucose in normal saline is poured through the tube every two hours, and after the third day an egg in four ounces of warm

milk is given three times daily by the tube. In a week or ten days, broth and gruels are given by mouth, and these liquids are gradually supplemented by semisolid and solid food. Alimentation through the tube can be kept up for a month or more until the catheter falls out. That withholding all fluids by mouth up to forty-eight hours or longer, leads to quicker and better healing in the sutured parts of the stomach or duodenum, is attested by Straus³ in his experimental work on dogs. The rationality of this treatment is based on Balfour's assumption that a completely perforated ulcer is a cured ulcer; therefore, when the perforation is repaired and the ulcer gets the necessary rest in order to heal, pylorospasm disappears, and the stomach functions normally.

At the Warren Hospital we have had four acute perforating ulcers, all of the duodenum, three being in males and one in a female. Two patients were seen one hour after perforation, one four hours afterwards, and the fourth one brought in four days afterwards. Operation resulted in three recoveries and one death, the patient who had gone four days dying. Two of the cases had the ulcers covered over by Lembert sutures and had jejunostomies, and two had the ulcer covered over and were treated by posterior gastro-enterostomy. Three had drainage in the ulcer region and two had drainage in the cul-de-sac. Of the three cases that have recovered, the two that had jejunostomies are in perfect health, nine and ten months, respectively, after operation, while the one that had the gastro-enterostomy is enjoying fair health, but has some food distress yet.

Tabulation of the results would be as follows:
Abstracts of histories:

G. M., male, dentist, aged 45. Seen at 8 p. m. Complaint, pain in upper abdomen.

For twelve years had dyspepsia; worse in spring and fall. Had hunger pain with pyrosis and eructations of sour material. For past three weeks he had not been feeling well because of pain in upper abdomen two hours after eating. During the evening he had felt worse, and he went over to a masseur for a massage, thinking this would make him feel better. One hour afterward he was seized with excruciating abdominal pain while in his office; he walked across the hall to our offices and was seen at 8 p. m. He had a small running pulse; face and extremities were cold and clammy, and he was rolling from side to side with his hands pressed to the epigastrium. He made several attempts at vomiting. Board-like rigidity over entire upper abdomen with tympany over liver region. Stomach-tube passed; gastric contents bloody.

Diagnosis: Perforated peptic ulcer.

Operated on at 9 p. m. Perforated duodenal ulcer. Ulcer closed, Posterior gastro-enterostomy. Drainage to ulcer region.

Present condition: He still has some stomach distress and belching of gas.

J. B. S., aged 33, male, farmer.

Complaint, pain in abdomen when hungry.

Patient was seen at 5 p. m., and said he had had hunger pain at intervals for nine years, with food relief. At present, the intervals of freedom from pain are getting less. For the past three weeks he has had food pain more severe than hunger pain, beginning immediately after eating and lasting one hour; followed again in one hour by hunger pain. Formerly he was able to get relief from a glass of milk, but now he has none.

Physical examination was negative except for some soreness over the upper abdomen. He was advised that he had an ulcer of the stomach and that he should be operated on, but he refused operation. He went up town, ordered some ice cream, and while he was eating it he was seized with a severe pain in the epigastrium, and was carried to the hospital at 5:30 p. m. He was then in such severe pain that he could neither sit nor stand.

Examination now revealed distension of the upper abdomen with rigidity over the upper right rectus.

Diagnosis: Perforated duodenal ulcer.

Operation: Perforated duodenal ulcer; sutured and covered over by omental flap; jejunostomy; tube and wick-drainage into kidney pouch. Drainage of cul-de-sac.

Present condition, after nine months, good health.

P. R., male, farmer, aged 40.

Complaint, pain in abdomen.

Eight years ago he had what he called an "abscess in the stomach." Was in bed five weeks. Since that time he has been well until the past two days, when he has had a general malaise and abdominal soreness. At 5 p. m. he had a sudden acute attack of pain in the upper abdomen. Brought in at 9 p. m., and examination showed tenderness and rigidity over the entire side of the abdomen with some over the upper left side.

Diagnosis: Perforated duodenal ulcer.

Operation: Perforated duodenal ulcer, superior surface of duodenum. Perforation the size of lead pencil was closed. The peritoneal cavity contained one quart of fluid. The appendix presented itself, and was removed. Jejunostomy. Drainage in cul-de-sac through separate incision.

Present condition after ten months, good health.

M. A. In two cases the records are so incomplete that they are of no value except they show that the patient had been sick four days, and that at operation a perforated duodenal ulcer was closed and a posterior gastro-enterostomy done. Death in two days.

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ACUTE SUPPURATIVE OTITIS MEDIA*

BY ARCHIBALD W. HOWE, B. S., M. D.

MINNEAPOLIS

I feel that I must offer apologies for giving a paper on the subject of acute suppurative otitis media to a group of railway medical men. But in order to give a practical paper on a subject frequently confronting the general physician and surgeon, I chose this subject.

When one considers the frequency of the disease, the damage it does to hearing and its dangerous complications, the subject becomes most important.

Inasmuch as we must diagnose and treat the disease properly and promptly, a comprehensive knowledge of its causes, pathology, and symptoms is essential. Before taking up the treatment I will give a review of these foregoing essentials as briefly as possible.

Etiology.—The predisposing influences on

middle-ear infection are the conditions that interfere with the natural action of the ciliated cells lining the Eustachian tube and the air-pressure in the middle ear.

Nasal obstructions from any cause are injurious and diseased conditions in the pharynx all retard inner ear aëration. Both conditions are particularly menacing to the middle ear during the course of acute infections, because their tendency is to retain infectious material; and by becoming swollen and obstructive they tend to facilitate infections into the Eustachian tube. Most common of these conditions are adenoids, hypertrophied tonsils, diseased turbinates, polyps, and sinus infections.

Infectious diseases predispose to middle-ear disease. The tendency of all infectious diseases to infect the middle ear through the Eustachian tube depends on the fact that the membranes of the upper respiratory tract are involved, as, for

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example, in measles, scarlet fever, and influenza. Each disease supplies its own organisms, and the ear is never free from danger during the period of such infection. Any rise in temperature during the convalescent period of these diseases, if unaccounted for otherwise, should make one suspicious of ear infection. Pneumonia is also frequently complicated by middle-ear infection; and it is in pneumonia that otitis media and mastoiditis develop frequently without pain. Because of this fact it was made a rule in some of the army camps to inspect the ears daily in pneumonia cases.

Measles during the epidemics at the camps proved a great forerunner of middle-ear infection, and it stands by itself as an etiologic factor in the development of the severest types of the disease. During the epidemic at Camp Shelby measles accounted for 44 cases of mastoiditis out of 123 cases reported. Seventy-three per cent of all cases in which a pure culture was obtained proved to be streptococcus, and 16 per cent staphylococcus. Eight of the 12 deaths reported had had measles. Seven of these 12 cases returned streptococcus viridans in pure culture, three hemolyticus, and two were of mixed infection.

The early stages of acute purulent otitis media are usually monobacterial in character. The inciting factor in the disease is the organism isolated in pure culture when the culture is immediately taken after incising the drum or after a spontaneous rupture.

Streptococcus pyogenes, *streptococcus hemolyticus*, *streptococcus viridans*, *pneumococcus*, and *staphylococcus* are the organisms most commonly isolated. The streptococcic types are the most virulent and destructive to both soft and bony tissues, and, unfortunately, the most frequent, *streptococcus hemolyticus*, is very often related to lung and pleural infections, as was demonstrated during the recent influenza pandemic.

Most army camps reported *streptococcus hemolyticus* the invading organism. Camp Shelby, Miss., reports the *streptococcus viridans* type most common at that place. So virulent is either of these types that in many cases the invasion of the middle ear and mastoid has the appearance of being synchronous, so rapidly does the infection progress.

Pathology.—When the determining factor of the disease enters the Eustachian tube the mucous lining swells and the tube closes up. Organisms thrive in the exudate produced and this fills up

the middle meatus. Pressure on the drum takes place, and unless relieved the exudate takes the path of least resistance and infects the mastoid, antrum, and adjoining cells.

Symptomatology and Diagnosis.—With a few exceptions the onset is sudden, following grip or so-called cold, or during the late stages of one of the previously mentioned diseases.

There is at first a feeling of fullness in the ear, an obstructive feeling in the canal, and hearing is usually impaired. The patient may think his voice is louder than usual, and occasionally there are cracking noises or buzzing in the ear. These are the common premonitory symptoms.

The onset of pain comes on with closure of the Eustachian tube and the filling up of pus in the middle meatus. In children the onset is usually marked by a chill and a rise in temperature. Pain may be absent in any case where from the beginning there is a hole in the drum, as in these cases the pus is under little or no pressure. Pain when present is steady and boring in character.

Though a rise in temperature is not a reliable guide in following a case or making a diagnosis, it deserves special mention. In two of our cases a mastoiditis which came to operation this year, neither case had had a temperature of over 99°. One of these cases had no pain at any time. These were in adults. In children and young adults the temperature may range anywhere from 100° to 105°.

When the rise in temperature persists after the drum is opened and drainage seems good, the question as to whether or not the disease has spread beyond the middle meatus becomes one for serious consideration. If the general condition is good, with little or no pain, no tenderness behind the ear, there is no cause for alarm or immediate operation. An *x-ray* of the mastoids very often clears the situation. Fever sometimes continues until the body resistance establishes itself. And again, the original factor—the rhinitis or other infection—has not yet subsided. As a rule, the temperature drops when good drainage is established.

Suppuration usually begins two or three days after the onset. It may seem delayed in children because in the early stages drainage very often takes place through the Eustachian tube. At first the discharge is serous and profuse, and as the disease progresses becomes purulent. Discharge is constant if drainage is good until it clears up. Where intermittent, it is suggestive of poor drainage due to too small an opening or,

rarely, due to mastoid involvement. Abundant intermittent discharge in later stages is very suggestive of mastoid involvement. Under proper treatment and favorable conditions discharge ceases in two or three days to as many weeks. Cases in which the discharge lasts longer have a deeper infection, and in many the mastoid cells may be infected.

Cases resolving favorably, the drum grows paler, the malleolus becomes visible, and hearing gradually returns to normal. Unfavorable cases, and those not treated promptly, develop mastoiditis and other complications. Others resolve into chronic otitis media with destruction of the drum, bone necrosis, and defective hearing.

Diagnosis of acute suppurative otitis media is made on the early symptoms of earache, red drums, etc. Should we find on examination that the patient flinches when the lobe of the ear is grasped gently and complains of more pain we must always be suspicious of furunculosis or otitis externa. Examination of these cases reveals normal hearing and a normal drum unless the canal is swollen shut.

Both furunculosis and acute suppurative otitis media may reveal pus in the canal. The former never pulsates, while the latter does. This point it is especially well to remember in children, as a good examination in these cases is always difficult. Pain associated with redness of the drums or a bulging drum are the early symptoms.

Prognosis.—Under favorable conditions of good general health and early opening of the drum, the prognosis is good for early cessation of the discharge and for recovery of hearing. It is always well to be guarded in prognosis for the first few days. Culture taken at the time of opening the drum is always an aid to prognosis.

Treatment.—The general physician, as a rule, sees these cases first. Because early opening of the drum is essential, I believe that he should be able to do it.

If, on examination, you find a drum slightly red and no bulging you can treat with warm carbol-glycerine solution, 5 per cent. Apply heat with rest in bed. If you find a drum bulging slightly in any part or general bulging, do not treat, but open the drum. Never allow a drum to rupture itself. Nature's opening is usually small and misplaced, and gives poor drainage. Edges of a ruptured drum are rough, and healing very often results in scars, while a clean incision is followed by little or no scarring.

Having decided to open the drum, the question

arises how best to do it? Some men apply a local anesthetic mixture composed of equal parts of cocaine, phenol, and menthol. Anesthesia by this method is sometimes slow, and repeated applications of the mixture to the drum causes some necrosis and scarring to the epithelial layer due to the action of the phenol. We use general anesthesia. Gas is our first choice, and ether second. Ethyl chloride is used by some for short general anesthesia.

With the patient asleep, head-mirror on, light in place, and lance ready, you incise the drum. The posterior inferior half is the place selected. Incise from below in an up-and-out curve to the periphery of the drum. By incising in this manner the circular muscular fibers are severed. This causes gaping of the wound and incidentally good drainage.

In children where the drum slants mesially from above, if you incise from below up there will be no danger of missing any part of it. In very young children a crucial incision may be made, as this incision is not apt to close up before the ear is well drained. In case a smaller opening is being made larger, incise from below the opening, through it to a point above if possible. If the small opening is unfavorable make an incision in the posterior inferior quadrant. An incision should be thirteen-sixteenths to one-fourth inch long.

After incising wait a minute to allow the bloody discharge or pus to run out, then wipe the canal and drum clean. Insert a small piece of sterile gauze or absorbent cotton. This stops the discharge from running out over the ear and prevents further infection from entering through the canal.

Phenol-glycerine solution does not help at this stage. It only mixes with the discharge and comes out, and it sometimes interferes with drainage. Wiping the canal and drum clean three or four times a day with dry absorbent cotton is the best treatment. Douching of the ear is not to be considered, as it may force the infection into the attic and mastoid cells. Spray of the nose and throat followed by politizerization is advocated by some. Drainage of the middle ear also takes place through the Eustachian tube by the action of the ciliated cells lining the tube. Inflation forces the infection or draining pus back into the middle ear. In acute cases this treatment is better left out.

Dry sterile treatment three or four times a day with a calomel-saline laxative and rest in bed,

constitutes, I believe, the best treatment. A culture taken at the time of incising the drum is good practice. Remembering that a rise in temperature is unreliable as a guide to the condition, one must rely a great deal on the discharge. Ordinarily the cases clear up in a few days. Cases in which the discharge lasts over ten or fourteen days should have the advice of an ear surgeon. Never wait for the tender spot to develop behind the ear or the ear to bulge. We no longer wait for these symptoms to arise. As soon as the *x*-ray plates show cloudy mastoid cells opening of the antrum should be considered.

As soon as the case clears up the first thing to do is to remove the tonsils and adenoids, and have the nose conditions remedied.

In closing I will say that early opening of the drum and dry sterile treatment result in early drainage, limit the progress of infection, reduce complications, and cause a more free healing and an early return of the hearing.

DISCUSSION BY THE AMERICAN RAILWAY SURGEONS

DR. O. P. BOURBON (Kansas City, Mo.): I wish to compliment Dr. Howe on his paper. He has covered the subject very thoroughly.

One point I wish to emphasize is to condemn the douching of the ear. The author states that douching of the ear forces the secretions farther into the ear and often causes mastoiditis. I have had a number of cases in which the surgeon was so anxious to clean the ear that he douched it with peroxide, which is especially to be condemned.

Another thing, oftentimes in very young babies you do not find the cause of rise of temperature. If you will look at the drumhead you will find that they have an acute otitis media.

DR. ROBERT W. MILLER (Los Angeles, Cal.): I wish to commend the paper in general. I realize the difficulties which confront the general practitioner and the general surgeon. Many cases come to specialists from the hands of the general practitioners, and the specialist is very apt to think the general practitioner ought to have known what the trouble was and how to manage it better. I am sure you all appreciate the timeliness of the Doctor's paper. I have no doubt it will be helpful to those of you who are not doing much ear work.

I would mention one other source of infection which we find, particularly in late years being of more than tolerable frequency, that is, infections from the teeth. In Los Angeles if we search for it we find that a great many middle-ear and sinus troubles and various diseases of the eye, are traceable to the teeth alone, or that the teeth and conditions of the gums participate in the focal infections which bring about the middle-ear trouble.

One common error into which we fall in dealing with mastoid complications is that of attaching too much importance to the rise of temperature. After the early stage of the case we frequently find, more particularly if we are not dealing with a severe streptococcal infec-

tion, that the temperature will stay pretty close to the normal point with little constitutional disturbance, and the patient will be going about with a mastoid abscess. So do not attach too much importance to the fact that there is not a rise in the temperature in a mastoiditis of some days' duration.

In dealing with children we should be particularly careful to give early attention to these cases, because the bony sutures at the base of the skull are not well closed and extension to the meninges takes place quite readily. If you find a child crying with pain and rolling its head at night, of course you are pretty sure to examine its ear. In a case of mastoid abscess complicated with middle-ear inflammation in a child, you will not expect to find the diffuse swelling over the entire mastoid area which you so frequently find in the adult. However, in the adult, as in two or three cases I have operated upon recently, we sometimes find absolutely no swelling, not even tenderness over the mastoid area in well-defined cases of mastoid abscess. I am sure the essayist will bear witness that we do meet those cases. But in the case of the child you will find that if Nature has protected the little one to the extent of establishing a fistula, then your soft swelling back of the ear will not be over the mastoid area particularly, but frequently almost directly above and posterior to the auricle. Why? Because there are no mastoid cells developed as yet.

DR. CHAS. P. FRANTZ (Burlington, Iowa): Dr. Howe will agree with me in emphasizing the fact that if a child has had one siege of otitis media it should be given particular attention. We do know that inflammations about the nose and of the tonsils cause a great many cases of otitis media where, if the tonsils had been removed at a previous time, the condition would not have developed.

I would not consider of much importance the proposition that infection of the teeth will pass to the middle ear—I do not see how it can readily do so, and besides, we have many cases of otitis media in children whose teeth have given no trouble and even in those whose first tooth has not yet erupted. Of course, the temporary teeth are not so important and do not decay to such an extent as do the permanent teeth.

The Doctor mentioned the infectious diseases likely to be followed by this condition. He mentioned the fact that many cases are caused by a simple cold. In the past we have been in the habit of teaching children to blow the nose good and hard, but this should never be done. Only one side at a time should be blown, or cleaned with a spray. Adults, especially, ought to be cautioned against blowing the nose too hard, fearing the forcing of infectious material into the Eustachian tube.

So far as making diagnosis by means of the *x*-ray is concerned, I think this is not possible early and but little value is attached to *x*-ray findings in the various institutions throughout the country, I believe. Few times are we able to find an infection in the cells of the mastoid process by this means. The posterior-superior swelling or bulging of the external canal wall ought to be taken into consideration before we operate on any case, although its absence is not necessarily an indication of absence of the diseases; but if present it is an indication for immediate opening of the mastoid cells.

As to making incision of the tympanum, where necessary, I believe it better to increase the opening already present, if not sufficiently large, no matter where Nature has made it, or where you have made it, rather than to make a second incision. Nature is more likely to close the one opening than the two. There are few which do not close of their own accord, and perhaps 50 per cent that do not close of their own accord will close following systematic treatment.

In regard to treatment: I could not agree as to the packing in of cotton in any case at all. Cotton does not drain nearly as well as gauze. In a measure it serves to dam up the pus between the drum and the cotton if the cotton is not flush against the drum, and even lessens drainage from the middle ear, which is still worse. We should not only wipe the ear out, as stated, three or four times a day, but use drainage. In any other abscess cavity we aim to drain always. If we pack sterile gauze tight against the opening of the drum, we will get drainage from that cavity, too. And we should use gauze made up with wide meshes. Some gauze is nothing more than heavy bandage material, and we know such material cannot drain as well. We should be careful to use gauze that is wide-meshed, then pack it close up against the drum. It is well also to dust a very little boric-acid powder on the drum before packing. Some one should attend to this at home as often as gauze soaks through or at least twice daily. We should have stated times when we will do this work ourselves also, and should watch the case, having the patient come often enough to see that everything is going well, every day perhaps at first, at least every other day in the beginning, then lengthening the intervals.

I agree that temperature is not a guide as to involvement of the mastoid. That is, however, a point not under discussion.

DR. JOHN STEELE BARNES (Milwaukee, Wis.): The discussion of acute suppurative otitis media is very apt to be the same as that of empyema among the army surgeons today. But it strikes me that the fundamental principles of treatment do not differ even of an empyema or acute otitis media, but the technic differs.

When Dr. Howe commenced to read his paper I thought I was going to have a chance for argument. I immediately took out pencil and paper, but made just one note. And I wish to compliment Dr. Howe upon his paper because he agrees with me in every respect. His etiology and pathology are clear, concise, and to the point.

There is just one feature that I would like to add in the matter of the etiology. It is not directly perhaps etiology, but a cause of the acute otitis media resulting from the etiology. A very large percentage of my cases of otitis media following measles, scarlet fever, pneumonia, typhoid, and even in cases of media which started, as you might say, from nowhere, were caused by severe and energetic blowing of the nose. If you will watch, you will find that a large majority of people make about ten times as much effort in blowing the nose as they need to. In summing up the etiology and pathology of the condition under consideration, Dr. Howe clearly demonstrated to us that, while the germs are present, the tube being closed, they cannot get into

the middle ear if the patient is extremely careful how he blows his nose. But if a child or an adult takes his handkerchief and presses one side of the nose closed and blows hard he is bound to shoot that infection into the middle ear—it cannot help but do so. And I think that a very large majority of our cases of otitis media are really caused by blowing the nose too hard.

I agree thoroughly with Dr. Howe in his treatment, which I call simple treatment. There is such a thing as too much treatment in anything, and especially in the acute middle-ear diseases. As I think of it now, I wonder how I ever secured any results in my acute suppurative otitis media cases some twenty-eight years ago, because I certainly was very officious and meddling—some and intensive. Since then I have learned that intensive treatment is not necessary at all—we learn by experience.

There are two fundamental principles in the treatment: first, a thorough, wide incision of the membrana tympani. Whether you incise up or down—I think is immaterial; but get a thoroughly wide incision the length of the whole ear-drum. That makes thorough drainage, and then maintain it. Now, to maintain thorough drainage I do not believe it is necessary to douche. I, however, generally do make a practice of gently douching the ear, but doing it myself once a day when I visit the case—never any more. Sometimes I do not even then, but wipe it out gently. I do have the treatment a little more frequently than does Dr. Howe. In acute cases, where you are getting a pretty copious discharge at first, I do not think three or four times a day is quite enough, and I find there are mighty few nurses (and especially very few of the families) who are able to get the gauze in properly, and the canal does keep filled with pus. And that is the very point you want to be sure of—that the canal is kept free of pus and kept perfectly drained. I like absorbent cotton better for this purpose. I have tried gauze out thoroughly, but find absorbent cotton better. I make a small, long tampon of the absorbent cotton. Many such cases you cannot get to the hospital, and unless our nurses are especially taught to look after these cases many of them are little better along that line than is an intelligent member of the family. The cone of cotton should be changed every half hour at first, which is easily done. And I say to the person who is caring for that patient, "As soon as the cone of cotton is saturated, remove it and put in another one." In this way you keep the canal from getting filled with pus. That is about the only treatment I give in these cases. Years ago I catheterized, but this is wrong, I found out my mistake. You should never do catheterization unless you reverse the process and have the catheter suck out what is in the Eustachian tube, but never blow out. I religiously fight shy of catheterization or politerization of these cases.

The Doctor brought out well the point that simple treatment is the most effective.

DR. HOWE (closing): On the whole I agree with Dr. Barnes. In my own experience I have questioned whether to douche or use the dry treatment. In regards to this, dry treatment has proved the best.

ATYPICAL SYPHILIS OF THE NERVOUS SYSTEM*

BY W. A. JONES, M. D.

MINNEAPOLIS

The usual diagnostic symptoms and findings are absent in a number of people who, fundamentally, are specifically infected, and it is sometimes difficult to determine the date and manner of the infection and, further, to determine the degree of positiveness of a specific disease. These cases properly, and probably, come under the head of nervous diseases, which are seemingly handed down from one's ancestors and which do not present any of the cardinal symptoms of even an atypical syphilis. And yet, behind it all, there is, apparently, a specific lesion or an inheritance of structure which is specific in type,—this in spite of the fact that in many of these cases the neurological findings are incomplete and the serological findings are indefinite. At least they leave one with the impression that a negative blood Wassermann is not sufficient. In a few instances where a patient has a positive blood Wassermann there is a negative spinal-fluid Wassermann. This is a reversal of the expected serological diagnosis. Commonly, the spinal fluid is where one expects to find the Wassermann reaction, the blood in these cases being either negative or doubtful. If one is to attempt to diagnose syphilis on a negative blood finding he must have something to corroborate his diagnosis. I think we pay too little attention to the type of individual who has syphilis, in some form, in some part of his body which is more or less in touch with his nervous system. We certainly do not analyze the individual as closely as we should, and at the same time keep in mind the possibility of an old syphilis.

In order to illustrate one point mentioned,—the lack of findings and the presumption of syphilis being present,—the case is presented of a woman of thirty-seven who, in all probability, has lived an exemplary life, and who married a man who was clean and without a probability of syphilis. Following an active child-bearing period she became weak and easily exhausted, finally depressed, and then confused. After being confined to the bed for a few weeks she improved, and, although she had not recovered from her depression, she went to a new home built purposely for her. The morning after her arrival there she was found in the bathroom, having made an attempt to end her life by thrusting a sharp-pointed mechanical instrument down her throat.

She was rescued, fortunately, from an immediate fatality, but in removing the instrument, a safety-pin, and a piece of wire, the wire, which was unprotected at both ends, must have dragged along the mucous membrane of her pharynx, and perhaps some of the surrounding parts. Very soon after this accident she developed a minor ptosis of one eye, a contraction of the pupil of the same eye, and a defect in the movement of her face on the same side. She was submitted to repeated examinations of both blood and spinal fluid, including the colloidal gold, the Wassermann, and the Nonne. The fluid from the spinal canal, and the blood were sent to two different laboratories on two occasions, and each time the findings were negative. But on the assumption that she had a ptosis and a right pupillary defect she was put on intensive treatment (neosalvarsan), and was given mercury internally. She made a very prompt recovery in spite of the injury to her tissues by this sharp-pointed instrument. She first recovered her mental balance; and later her ptosis disappeared, the pupil again resumed its responsibilities, and she regained full power in her face. The supposition is that this woman had a concealed syphilis derived from some unknown source, and that the injury she inflicted upon herself was the precipitating factor in the development of her physical findings.

A case somewhat similar as to conclusions is that of a woman thirty-six years of age, who, four years ago, suddenly and without any special reason, became tired and depressed. Her depression lasted for a week or ten days, when she suddenly got out of bed and went down town, and made purchases far beyond her means and her husband's credit. She evidently had ideas of grandeur and extravagance, which ceased as abruptly as they came; and in a few weeks she had regained her poise, both mentally and nervously. She was then well for three years or more. In November, 1919, the family moved to a town in the West, and there endeavored to establish a home. A similar attack developed, that is, an attack similar to the one described above, characterized by tire and depression, grandiose ideas, and finally, a period of excitement. She was sent East to be placed in a hospital, traveling in a private car attached to a train going sixty miles an hour. In her confusion she walked out

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of the rear door of the car and stepped off the rear end of the train, simply remarking to her husband, in passing, that she was going out to see one of the neighbors. She evidently fell, as a semiconscious person would fall, without resistance. She was rolled over between the tracks, and the train, going at such high speed, did not stop for two and a half miles; but when they backed up to pick her up she was walking toward the train. One tooth had been jarred loose, and she had picked it out with her fingers. She had numerous flesh bruises and some cuts in her skin, but no bones were broken and there were no serious injuries. She arrived at the hospital in safety, and was put through the usual tests. She was found to have a + + + + positive blood and spinal-fluid Wassermann. The question that arises is whether a latent syphilis may not be fanned into an active stage by an accident or an injury such as this woman passed through. It is quite probable that, had her blood and spinal fluid been examined four years ago, they would have presented the same findings, but it did not occur to anyone in attendance to do this. It is one of the illustrations which show that latent or concealed syphilis is one of the things for which we must be constantly watching.

Many of our nervous cases presenting a chain of symptoms characteristic of or at least resembling one of the classical symptom-complex disorders, may have for their base an old syphilis. The variability and the irregularity of sensation occurring in any chronic case, and particularly if it is associated with a general nervous and mental irritability, is a strong enough reason for investigating, by any known method, for the presence of syphilis. Skin diseases that accompany nervous disorders are not infrequently specific in their origin. It is well to remember, too, that syphilis of the nervous system is frequently accompanied by a disease of the meninges or the surface of the cord or brain. In these cases the multiple and irregular symptom group are usually quite sufficient to suggest a search for a specific infection, whether old or new. Many of our cases of so-called organic brain and cord lesions are typically specific, and yet, because of our belief in the clean life of the individual, we sometimes forget that syphilis is something to be reckoned with. Unfortunately for us, however, this syphilis is of so long standing that it has invaded territories by new growth, and little or nothing can be done for these cases. This is well illustrated in Erb's syphilitic spinal paralysis, which is, in reality,

only an initial stage of a chronic meningomyelitis due to syphilis. Then, too, the common or acute brain lesions, such as palsies that are incomplete and varying in type and in severity, demand the same careful search for a specific history. A thickening of the membranes in any part of the brain or cord may be the only evidence of the presence of syphilis. The writer recalls, too, one case where multiple cysts developed around the area at the base of the brain, numbering sixty in all, due, of course, to an arterial syphilis; but this was not discovered until an attempt was made to tenotomize one of the eye muscles for a defect. Even though this operation was performed with care and skill it started up an inflammatory or exudatory process, which brought out the true cause of the ocular palsy, namely, syphilis. The man died within three days following this minor operation. This simply serves to emphasize the importance of keeping in mind, among our surgical patients, the possibility of syphilis as a factor in the development of the disease. It looks surgical, but should be left to the syphilologist.

A number of so-called functional nervous disorders, such as we are in the habit of calling neuroses, psychasthenias, and psychoneuroses, have syphilis as a causative factor, and doubtless many of these unfortunate and so-called simply "nervous" people have a real disease and need definite antispecific treatment, rather than to be left to go on wasting their lives and the lives of others in chronic invalidism.

It is hardly necessary to remind the readers that neither race, sex, nor profession should be considered in our investigation of a specific disease factor, and that no pains should be spared, either by direct questioning or other means, to get at the source of trouble. There is no use denying the possibility that even the clergy may be infected. But we, in our present methods, leave the patient to infer that we are not in any way suggesting that he has contracted syphilis, either deliberately or accidentally, and we simply smooth it over by satisfying ourselves that symptoms and laboratory findings are enough. This calls to mind, too, the suggestion made above, that there is a variability in the progress of symptoms which are due to syphilis. One patient complained, in 1907, of a coldness in his left calf during most of the winter. This disappeared in the spring, but returned the following winter. This time, however, it was accompanied by definite weakness of both knees. During the following year this weakness would alternate from one knee to the other,

finally settling in the right knee, where it has remained. Then, too, there developed in the right foot a slumping, flabby weakness of the muscles, so that the patient wore out the toe of his right shoe. Two years later the patient had some diplopia, but at the time he was examined the diplopia had been absent for two years. At the time of his entrance into the hospital he had difficulty in walking, and was obliged to use a cane. He gradually developed difficulty in reading, and an inability to get out the second half of a word. Bladder symptoms began without pain in any part of the body. A careful examination as to sensation showed there was practically no difference on the sides, in the two legs, although the patient said he noticed a difference in sensation. His reflexes were all in good order. The pupils were equal and reacted to light and accommodation. He had a double ankle clonus and patellar reflexes. He had a positive Romberg symptom and an ataxic gait. Why look further for a diagnosis? It was proven, the man was put under treatment, and in four months he gained 50 per cent of the ground lost. This man might easily have been thrown into the ordinary spinal-sclerosis class, and yet, because his symptoms were variable, and because he presented irregular and indefinite complaints, it was discovered that he was an atypical case.

Then there is the oft-considered case of rheumatism which, under careful investigation, shows sufficient neurological findings to put it in its proper classification. A woman, fifty years of age, came under observation. She had, after her marriage, two miscarriages, then two living children; following this she had twelve miscarriages, and then another healthy child. She considered herself well up to the summer of 1911, when she had some dental work done, after which she developed headaches, which were confined to the right side. These headaches were not accompanied by nausea, but were always worse at night. She had no disturbance of her vision or any loss of pupillary reflex except that the left pupil was larger than the right. Her headaches grew steadily worse, and finally, in the fall of 1911, she found that her tongue would not move

freely and she talked badly. This disability entirely disappeared after a few hours, only to be followed three months later by another similar attack, but not so severe. At the time of the examination she was apparently as well as ever. She had no mental defects, there was no motor paralysis or anything of that sort, and the only complaint was that of pain in her head. The history further showed that her husband had "rheumatism" below the knees, and that in the later years of their married life he became sexually impotent. This accounts for her condition, and no one would hesitate in arriving at the conclusion that the husband was the source of her specific disease.

A not infrequent attempt to diagnose suspected syphilis is to put our patients under treatment. This sometimes clears the atmosphere and enables us to make a decision one way or another. But in doing this we must remember that there are other toxic disorders that may be responsible, as illustrated by the nervous diseases which accompany diabetes and chronic nephritis associated with focal symptoms. Here, as a rule, the urinary findings will solve the problem. We must not overlook the arterial system, but must keep in mind that many arterial diseases are non-specific in character. It is sometimes difficult, however, to separate arterial disease as specific or non-specific, because of the uncertainty of these concealed forms, these protracted or latent types of syphilis. Nor must we overlook the mental states which are the outcome of specific infection. There are, undoubtedly, numbers of cases of depression and excitement representing other forms of psychosis due to specific infections and yet unrecognized for want of specific and definite examination.

It is a sad commentary upon the once partially civilized world that syphilization is taking the place of civilization, and that we may expect more and more of these indefinite types of syphilis of the nervous system, and, again, our problems will increase. But the frequency of syphilis, the commonness of it, and the probabilities of it should be a restraining factor in our diagnoses.

**THE
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THE 1921 AMERICAN MEDICAL DIRECT-
TORY—AN APPEAL

Work on the seventh edition of the American Medical Directory has been begun, and *The Journal of the A. M. A.*, in a recent issue, sets forth the difficulties involved in its preparation. The increased cost will be, of course, so large that the directory must be issued at a loss of considerable size; but the greatest difficulty in the way is the absence of obtainable expert clerical helpers. This difficulty can be overcome only by the hearty co-operation of *all* medical men in the country in the form of the prompt and correct filling out and return of blanks sent them. The percentage of failures to be expected in this line is almost *appalling*.

We have used and italicized the last word in the above paragraph to express our humiliation over the indifference of physicians to many duties that are clearly imposed upon them by their obligations to the profession and, both directly and indirectly, to the public; and the certain failure of many to respond to the appeal for co-operation in a really beneficent enterprise undertaken by their own association, emphasizes the point we make. To go further into the failure of medical men in this line would force us, apparently at least, into a scolding mood, and we shall avoid the appearance of this evil by asking our readers heartily to co-operate in making the 1921 American Medical Directory the best yet issued by the Association. Such a directory has an al-

most incalculable value to many thousands of people, and to mar it with unnecessary and almost innumerable errors would be highly discreditable to the medical profession.

THE HEALTH DEPARTMENT VERSUS
THE COMMON COUNCIL IN
MINNEAPOLIS

Through some strange streak of wisdom the Minneapolis City Council decided, after Dr. Guilford's term of service was over and after his substitute had carried on the work for some time, that they would accept from the United States Public Health Service, in Washington, a trained man to re-organize and direct the Department of Health in the city. This man, Dr. F. E. Harrington, who had organized health departments in other cities, was looked upon as the proper guiding spirit. He came, he made a very good impression with both the medical men and the laymen, and things went on very smoothly. He was obliged to seek an associate, and he was permitted to choose a man from the Public Health Service who had worked with him before.

The re-organization of the Health Department of Minneapolis is not an easy problem for anyone, and, very naturally, the time came when some friction arose between the Department of Health and the Committee on Health and Hospitals of the City Council and the Public Welfare Board. The result is that some mistakes have been made on both sides, and, incidentally, many things have happened to cause friction.

Dr. Harrington is not a perfect man, and he, like others, is quite likely to fall into error; but, on the whole, his administration has been wise, scientific, and full of the teachings of the Public Health Service. When he comes to apply his knowledge, his experience, and what has proven to be the best public-health methods, he naturally runs up against opposition from the politician, the council member, or perhaps from some layman. Through all this controversy Dr. Harrington has maintained a very calm exterior, feeling that he was right and letting the other man "blow off steam." He has made no complaints when he has been abused, because he probably knew that the complainant was not a public-health expert. The result is that politics is creeping into the Committee and endeavoring to control the Public Health Department of Minneapolis. Recently the Commissioner of Health found it necessary to discard several of his workers. That, of course, immediately created consternation in the

political camp, and the matter has not been settled yet. In fact, the opponents are determined to take the matter up before the courts in order to reinstate some of the discharged workers. This, we think, is poor policy, and it is an injustice to a health commissioner who is an experienced man to override and overrule his methods and his appointments. Surely, if any department in the city of Minneapolis needed a scientific hand it is the Department of Health. Then, too, as it is so closely associated with the Board of Public Welfare it should receive the support not only of every physician but of everyone interested in public-health work. Incidentally, the opposition has determined to investigate and perhaps eliminate all boards which have to do with various departments in the Minneapolis city government, thus giving to the Council full authority, which is almost wholly political, in conducting the various sections of city government. Our best wish is that Dr. Harrington may be sustained, and that the City Council will keep its hand off of something it knows but little about.

SURGEON-GENERAL WILLIAM CRAWFORD GORGAS

News comes to us that former Surgeon-General Gorgas has had a complication of disorders and diseases which have resulted in a hemiplegia. The reports further state that his condition is more serious than was at first supposed, and it is quite likely that he may either die abroad or may be brought home an invalid.

THE JOURNAL-LANCET desires to do honor to Dr. Gorgas for his marvelous work. He has always been interested in the elimination of communicable and municipal diseases, and was a prime factor in cleaning up the Panama Canal zone, ridding Cuba of yellow fever, and then, as Surgeon-General of the United States Army, rendered great service in the early years of the World War.

In some respects Gorgas was a wonderful man; and he must have cultivated a remarkable memory, for he knew people and recalled incidents of long ago including details which even the recipient of his attention was unable to remember. For instance, while on a visit, a year ago, to Minneapolis, he met one of our prominent internists and immediately on hearing the name he said, "Why, Doctor, I met you thirty-one years ago when you were a young man just starting a practice in Minneapolis." If he knew others as well as he knew this prominent Minneapolitan, he

must have had a marvelous memory for names and faces.

Like many others in the United States service, the Surgeon-General was much overworked. He had many responsibilities, but he took them in a cheerful manner and did what was expected of him. He, like others, had his followers and his enemies, and eventually he was relieved from the office of Surgeon-General and sent abroad on an important mission. His name will live for many years on account of his courteous, kindly, and gentlemanly attitude, and his insistent quiet force, which carried him over many obstacles and which enabled him to rid many countries of destructive diseases. Like others, too, who were in the service, he will be forgotten by the multitude in spite of the fact that he rendered service of inestimable value to mankind. But that is the way of the present generation, the majority of whom are selfish, self-centered, and indifferent.

A PSYCHOPATHIC HOSPITAL

Friends of the University of Minnesota, and particularly of the University Hospital, are exerting themselves in various ways to establish a hospital devoted to and specially fitted and managed for the care and treatment of nervous and mental cases.

These psychopathic hospitals are much more frequently found in the East than in the West, and in all the large cities there are one or more hospitals of this kind. There are many reasons for the establishment of a separate building for the benefit of nervous and mental cases. The number of people in a city the size of Minneapolis who become temporarily upset, nervously fatigued, or mentally disturbed, is gradually growing, and some provision must be made for them, otherwise the same old conditions will prevail. Some man or woman who has a transitory mental disorder, due, perhaps, to some removable cause, or who is in need of a little rest and investigation, is not infrequently unable to go to a private hospital and is unceremoniously, and perhaps too often unnecessarily, sent to one of the state hospitals for the insane. The mere fact that one has gone through a legal process, a commitment, even though it be voluntary, or, if not voluntary, necessary, before the Court Commissioner or Judge of Probate, is sometimes the last straw which prolongs the attack, and makes the recovery one of doubt or uncertainty. This is not in any way a reflection upon the recognition of mental disorders and the neces-

sity of confining people in a state hospital for the insane, but is meant to cover a large number of cases in which a public or even a voluntary commitment might be withheld. We all recognize that many acute conditions and acute infections and diseases accompanied by abnormal temperature and great fatigue occur among the neuropsychiatric individuals, and for this reason they should be given attention. And the only possible provision is the establishment of a psychopathic hospital.

This institution, if built in connection with the University Hospital, would probably be under the same management and under the same staff, so that the patients would have the benefit of a thorough examination made by various specialists, and, finally, as individuals, they would be passed upon by the neuropsychiatrist attached to the hospital staff. Mention has been made before of this subject, and various men who have been interested in the project have suggested a hospital of thirty or forty beds. But the impression prevails with the writer that this is not large enough,—that nothing short of fifty beds should be built. Then, too, comes the question of securing a man who could give his whole time to the psychopathic ward, and therein lies some difficulty. It is possible, of course, to train a man for this kind of work, particularly since it is known that many medical men who went abroad in the service were drafted into neuropsychiatric work, and particularly into the care of the psychoses, hence it might not be so difficult as we imagine to find a whole-time man who not only would devote himself to investigation as to the mental hygiene of the individual, but would also direct the sociological work, which is a part of the whole plan of psychopathology.

The establishment of the hospital means the acquisition of funds, and here is where Minnesota is at present extremely unhappily situated. In asking for funds for the care, detention, and treatment of the transitory nervous and mental cases, the subject will have to be explained with great care and in detail to the average legislator. He will stop only to consider that we have three great hospitals for the care and treatment of the insane, and he will not see why other hospitals should be added for their care in Minneapolis and the immediate vicinity. He would look upon this as a purely local matter, and would be inclined to think that the building should be erected and maintained by Minneapolis herself. But if he would look into the subject a little more deeply

and realize that not only Minneapolis and St. Paul but the state at large would profit by a psychopathic hospital, perhaps his financial interest might be enlisted. There is no objection, however, to someone subscribing \$250,000 to the establishment of a psychopathic ward or hospital in connection with the University Hospital. It seems mere child's play to raise such an amount of money in the East, but to the Western man it seems like a tremendous amount of money, and again the fact bobs up that the East knows how to give to hospitals and the West knows nothing about it, and, further, does not want to give. What better memorial could a man erect for his name than to build and endow a psychopathic hospital on the University Campus?

It has been shown by other institutions of this kind that many patients may be treated throughout the year and may be restored to their families and to their work or professions with very little delay,—that is, they may go to this kind of a hospital for a very short time, and it may be just the thing to tide them over their emergency state. Other hospitals are needed in Minneapolis, and doubtless they will receive proper attention; but this hospital is one that is needed for immediate purposes; yet how it is going to be developed and whether it is a possibility no one knows. If we have to wait, however, until the Legislature meets, the appropriations are secured, and the building finally built and equipped, it will be four or five years. But if the University Medical Department is to continue to be the advanced department in the University as a whole, the establishment of a psychopathic hospital cannot be too urgently advised.

LEPROSY APPARENTLY CONQUERED

Probably every reader of this paper has seen in the daily press within the past two weeks the announcement that a new and apparently successful treatment for leprosy has been discovered; and, equally probably, this announcement has been passed by as a part of the daily false grist of medical news that the daily press gives out. Fortunately, the information concerning a probable cure for leprosy, one of the most dreaded diseases of all times, recent and ancient, comes from the United States Public Health Service, and is true, notwithstanding the fact that the daily press spread the news far and wide.

For some years it has been observed that treatment of lepers with chaulmoogra gave good results, but the treatment is difficult, and only

unsatisfactory results followed the most careful experiments. Finally the active constituent of the drug was isolated, and systematic treatment with the new product, which is called "ethyl ester," was begun at the Leprosy Investigation Station at Kalihi, Hawaii, under the supervision of Dr. J. T. McDonald, Director of the Station. Forty-eight lepers took the treatment for a year, and all have remained apparently cured for the past eight months.

Further details concerning the treatment will be given out later by the Public Health Service.

THE JOURNAL-LANCET AND THE NORTH AND SOUTH DAKOTA STATE MEDICAL ASSOCIATIONS

It is very gratifying to the editor of THE JOURNAL-LANCET to receive the two handsome endorsements given the paper and his work by the State Medical Associations of North and South Dakota at their recent annual meetings in the form of a renewal of the paper's official relation to such associations; and also in the form of an increased subscription price, which was so justly due the publisher for maintaining the standard of excellence of the paper in spite of the largely increased cost of publication.

It is the well-nigh unanimous expression of opinion on the part of the leading men in the two Dakotas that THE JOURNAL-LANCET has been helpful to them in their work of serving the public interests of the two states in health matters, as well as the interests of the medical profession; we are certain their co-operation has been helpful to us in our work of publishing the paper, and has contributed to its success in no small degree. For such cordial aid we extend the entire membership of the two associations our cordial thanks.

OUR FIFTIETH ANNIVERSARY NUMBER

In our issue of June 1 we endeavored to have our readers review a period of fifty years in the medical history of the Northwest, which period was the first fifty years of the life of THE JOURNAL-LANCET and practically the first fifty years of medical practice in Minnesota, while the other states of our special territory have little or no medical history extending over a half century.

Our anniversary number was by no means an issue prepared by great endeavor; but, on the contrary, was an almost spontaneous report by

our readers of what they have seen in an experience covering the greater part of the period.

We shall refrain from publishing the many words of commendation and congratulation that have come to us from medical men in the Northwest, but we want to record our sincere thanks to the men who made the issue what it was,—a brief record of the things seen and done by the doctors, especially the pioneers, in this new and grand country in the past fifty years.

THE CATHOLIC HOSPITAL ASSOCIATION OF THE UNITED STATES

The meeting of this Association, which is rather unique in type, took place at St. Thomas Seminary, St. Paul, on June 22, 23, and 24. The attendance was around two thousand, and they came from the various hospitals of the country in which staffs of the Catholic hospitals were represented, including the managers and superintendents of hospitals under Catholic management.

This Association is not directly connected with the American Hospital Association, although the majority of the hospitals of Catholic denomination are represented. It covers a field which the American Hospital Association has been unable to take care of, however, for no special definite reason, but due to circumstances and conditions which prevail everywhere. It has done a great deal of work toward the standardization of its own as well as other hospitals.

One very pertinent line of papers came up on Wednesday, when the nursing problem was under discussion. It seems inevitable that the nurse will either have to associate herself with the Federation of Labor or she will have to come back to the principles upon which the nursing profession is founded. It seemed to be quite the opinion of men in authority, and who are familiar with this phase of hospital life, that two types of nurses must be recognized, call them what we may. The probabilities are that a shorter training will be advocated by both this Association and the American Hospital Association,—that is, nurses may be trained in one or two years and may become registered nurses. And it is suggested that nurses who have gone through a three-year period of training may have their experience extended for another year, when they will become technical nurses,—that is, nurses of a somewhat higher order and a little more elaborately and widely trained; and they are the ones

we would look to for the performance of unusual duties, such as taking charge of hospitals, and acting as heads of surgical departments and operating-rooms. The question is, Will the nurses do this? Will they accept this recommendation of the Association, and will they not take it up themselves and settle the whole nursing problem in a satisfactory manner so that the highly trained nurse and the practical nurse who is trained for practical purposes and bedside work shall have a common interest? One objection to the reduction of training lies with the nurse herself. She wants three years of training, while the majority of hospitals would be perfectly satisfied with a two-year service.

All sorts of topics were discussed by the Association, and the official journal of the Association, *Hospital Progress*, will publish the transactions of the meeting and the papers that were presented at it.

BOOK NOTICES

SYSTEMATIC DEVELOPMENT OF X-RAY PLATES AND FILMS. By Lehman Wendell, B.S., D.D.S., Chief of the Photographic Work, Instructor of Prosthetics and Orthodontia, College of Dentistry, University of Minnesota. St. Louis: C. V. Mosby Company, 1919.

This little book will serve excellently as a guide and reference book for the dark-room assistant or technician of the Röntgen laboratory. It is certainly true, as the author suggests, that much of the worse-than-useless- x -ray work which is being palmed off on an unsuspecting medical professional owes its inadequacy to bad dark-room technic; and this volume is an attempt to correct this fault.

The various chapters deal with fundamentals, methods of development, formulas, intensification and reduction of negatives, tanks and their uses, chemicals, suggestions, the dark-room and lantern-slide making.

The illustrations are numerous and very serviceable.

FRANK S. BISSELL, M.D.

MANUAL OF OBSTETRICS. By Edward P. Davis, A. M., M. D., F. A. C. S., Professor of Obstetrics in the Jefferson Medical School. 12 mo. of 447 pages with 163 illustrations. Second edition. Cloth. Price, \$3.00 net. W. B. Saunders Company, Philadelphia and London. 1919.

No introduction, comment, or criticism is in order where the name of Edward P. Davis is associated: it speaks for itself. The second edition of the above manual, with revised sections, comprises a very concise, boiled-down, reference book in obstetrics. Invaluable to the student and extremely helpful as a quick reference work for the busy general practitioner. The illustrations, chiefly diagrammatical, are easily translated and are of great aid in securing the meat of the subject in a short time.

The chapters on the mechanism of obstetrics are especially good and well illustrated. The reviewer was

especially interested in the chapter on injuries to the fetus in delivery. This is a subject not yet given due consideration as its importance is not sufficiently appreciated.

W. H. CONDIT, M. D.

SURGICAL CLINICS OF CHICAGO. By numerous authors. Vol. 3, No. 3. June, 1919. Philadelphia and London: W. B. Saunders Company. Price, \$10.00, Bi-monthly.

This volume serves to bring before the medical profession what is going on in the larger clinics in Chicago. It aids the busy practitioner who is unable to make frequent visits to Chicago to keep in touch with certain advances and with accepted methods of dealing surgically with the reported cases.

Many of the case histories are necessarily short, and the differential diagnosis incomplete. The work probably serves its greatest function as a pleasant form of recreational reading to busy surgeons.

STANLEY R. MAXEINER, M. D.

DIET IN HEALTH AND DISEASE. By Julius Friedenwald, M.D., Professor of Gastro-Enterology in the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, and John Ruhräh, M.D., Professor of Diseases of Children in the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore. Fifth edition. Cloth. Price, \$6. Pp. 919. Philadelphia: W. B. Saunders Company, 1919.

The present edition of this work is a worthy successor to those that have gone before and established it as one of the most exhaustive and authoritative treatises on the subject of diet that exist in the English language.

Perhaps no department of medicine demands greater knowledge or none is less understood by the profession in general, and this applies to a considerable extent to surgery, as well as to internal medicine.

It is interestingly written, and covers the subject from infancy to old age and from health to disease.

The physiology and chemistry of metabolism are appropriately treated, and the dietaries useful in the various diseases are set forth, together with a kind of invalid's cook-book section which contains directions for their preparation.

A table of calory values adds materially to the book's usefulness, and a chapter devoted to the detection of adulteration in foods is of great practical worth.

The section on dietary regulations for institutions, hospitals, prisons, etc., will interest those whose work lies along these lines.

The volume closes with a brief discussion of War Dieting.

H. L. KNIGHT, M.D.

A MANUAL OF OBSTETRICS. By John Cooke Hirst, M. D., Associate in Obstetrics, School of Medicine, University of Pennsylvania. Cloth. Price, \$3.00 net. Pp. 516 with 216 illustrations. Philadelphia: W. B. Saunders Company, 1919.

A manual of obstetrics of four hundred and eighty-five pages, excellently illustrated, comprehensive in scope, yet succinct in description. The work is practically a compendium of obstetrics with subject matter displayed in the order of large text-books. The manual is well written throughout.

On the following points in obstetrics, which are subject to marked difference of opinion, the author advocates: routine vaginal examinations in labor; genital repairs one week after labor; and active treatment of

abortion and puerperal sepsis. His expositions are interesting, whether one agrees or not.

The chapters on pathology of pregnancy, injuries of the birth canal, pathologic sequelæ of childbirth, and obstetric operations are especially good.

The emphatic warning against preoperative iodine preparation and the substitution of a wet compress method is odd.

The manual is well indexed.

R. T. LAVAKE, M. D.

THE MEDICAL CLINICS OF NORTH AMERICA. Volume 3, Number 2. (The New York Number, September, 1919.) Octavo of 270 pages. Philadelphia and London: W. B. Saunders Company. Published bi-monthly. Price, per year, paper, \$10; cloth, \$14.

1. Dr. Warfield T. Longscope has described five cases of purpura hemorrhagica with hemorrhages into the brain or meninges.

2. Seven cases of recurrent attacks of meningococcic meningitis within a few weeks of recovery from the first attack, are reported by W. W. Herrick and A. M. Dannenberg. They think the reinfection occurs from walled-off masses of exudate in the patient's own body, and suggest that these reinfections might be avoided by vaccine treatment during convalescence.

3. Heinrich F. Wolf describes in detail the re-education of tabetics by passive and active motion. He ascribes his success to the use and education of the few sensory nerve fibers that remain intact.

4. The relationship of the endocrine glands to over or under activity of the vagus and sympathetic nervous system is discussed by A. S. Blumgarten, who uses gland extracts, pilocarpin, and adrenalin in diagnosis and treatment.

5. Dr. Chas. A. Lamb discusses the differentiation of the presystolic murmur of mitral stenosis from the Flint murmur, presenting cases with autopsy reports.

6. A comprehensive review of the various tests for functional efficiency of the heart is given by Morris H. Kahn who quotes other authors giving references to literature on the subject.

7. Dr. H. O. Mosenthal discusses the management and treatment of nephritis with retention of waste products, as evidenced by edema, uremia, acidosis, and by the chemical tests of blood and urine.

8. The importance of chemical tests of the blood in the diagnosis, prognosis, and treatment of nephritis and allied conditions is discussed by Dr. A. F. Chace.

9. Dr. I. W. Held describes the splenomegalies due to various causes, and differentiates them on the basis of blood studies.

10. Constipation, enuresis, coryza, as found in infants and older children by the general practitioner, as well as by the pediatrician, are discussed simply and practically by Dr. G. R. Pisek.

11. Dr. George Stuart Willis gives the history and chemistry of radium, and illustrates its therapeutic effects by case-records of carcinoma, sarcoma, angioma, and Hodgkin's disease.

12. The study of the cholesterin content of the blood is used by Drs. M. A. Rothschild and A. O. Wilensky in the diagnosis of cholelithiasis and in the post-operative treatment of their patients.

13. Dr. Leo Buerger emphasizes the necessity of thorough study of cases of so-called cystitis, with a view to finding the underlying cause. He warns the practitioner against treating cystitis as a local infec-

tion only, for it may be only a complicating lesion of another disease, demanding "a multitude of different diagnostic and therapeutic agents to bring about a satisfactory termination."

OLGA S. HANSEN, M. D.

THE AFTER-TREATMENT OF SURGICAL PATIENTS. By Willard Bartlett, A. M., M. D., F.A.C.S., and Collaborators. Two volumes. Cloth. Price, \$10. Pp. 1066, with 435 illustrations. St. Louis: C. V. Mosby Company, 1920.

In volume one is considered the ideal recovery-room, the records and charts and preliminary considerations; and anesthesia, the effects upon the patient of an anesthesia, the usual post-operative symptoms, such as pain, thirst, nausea, vomiting, etc., and such conditions as hiccough, headache, backache, sleepiness, shock, and hemorrhages.

An important chapter on acute dilatation of the stomach is considered by McKittrick, in which chapter he emphasizes the importance of washing out the stomach in all gastric and gall-bladder cases, before the patient leaves the operating-table.

In the chapter on Postoperative Ileus by Bartlett, true ileus as well as pseu-ileus is discussed, with symptoms, diagnosis, and treatment.

The chapter by W. S. Priest on re-amputations, demonstrates the value of special operations on stumps to utilize muscle groups in the manipulation of special attachments for doing certain work.

The chapter on blood-transfusion by Bartlett is well illustrated, and takes up the various methods of transfusion.

In chapter twenty-two the various methods for preventing the loss of foreign bodies in the peritoneal cavity is taken up.

Interesting chapters are written by McKittrick on acid intoxication, nephritis, anuria and uremic coma, thrombophlebitis, pyelephlebitis, and hemophilia.

In treatment of operative wounds the clean, as well as the infected, ones are considered. Dakin's and Beck's paste method is quite thoroughly discussed. It is interesting to note that exercise, massage, and hydrotherapy are not excluded, but on the other hand, are made much of in this work.

The post-operative treatment by radium and the Röntgen rays in malignancy, by Russell H. Boggs, is quite comprehensive and demonstrates the value of these agents before and after an operation for malignancy.

Other interesting chapters are found in Volume I on fat embolism, fistulæ, blood transfusion, the reconstruction of the patient and post-operative treatment in children and elderly people.

The final chapter in this volume on post-operative mortality gives the relative safety of the various anesthetics and of the operations performed upon the various organs of the body. The literature has been well abstracted on this subject and seems quite conclusive.

Volume two takes up specific operations upon the various portions of the body. This volume demonstrates many of the operations performed, as well as the post-operative complications following these operations.

The chapter on ventral hernia is well illustrated by a number of excellent large drawings.

The chapter describing operation upon the thorax is especially interesting, and is well illustrated, and the

same may be said about the operation upon the intestines, gall-bladder, and ducts.

Other interesting chapters are those upon the neck and the pelvic organs in the male and female.

John R. Caulk and Harry G. Greditzer write an interesting and valuable chapter upon the post-operative treatment of obstetric and vaginal operations, and also in the one by Reder post-operative treatment of rectal and anal lesions is taken up as completely as space would permit.

The chapter on surgery of the extremities by Bartlett and Cole considers especially the complications following amputations, the painful stump, ulceration, syphilis, tuberculosis, osteomyelitis, the general principles underlying operations, infections and the latest methods of treating them, also infection with gas bacillus, varicose veins, and skin-grafting.

The chapter on post-operative treatment of orthopedic patients by M. S. Henderson is excellent. He considers the hygiene, as well as such topics as fractures, their various kinds and locations, arthrodesis, malignant diseases of the bone, bow-legs, knock-knees, congenital dislocation of the hip, club-feet, hallux valgus, tuberculosis of the spine, flat feet, and a few others of less importance.

Many of the chapters on operations are well illustrated, showing the manner of operating, and it also takes up the post-operative complications and treatment following these operations, so that it might also be considered a book on operative surgery, as well as post-operative treatment. It is especially valuable for the young surgeon. It is a very worthy undertaking and a credit to the author. It is quite complete, as very few important operations or complications following operations have been omitted.

The work is written in a plain and interesting manner, making it pleasant and profitable reading, and it is not too voluminous, but sufficiently complete to serve as a guide for surgeons.

The abstract of literature is extensive on nearly all the subjects that have been considered. The paper of the two volumes is good, illustrations are of large size and numerous, and the printing is in large type, making it pleasant and easy to read.

It is a book that meets the demand of the profession.

A. E. BENJAMIN.

THE MEDICAL CLINICS OF NORTH AMERICA. January, 1920, Vol. III, No. 4. The Boston Number. Published bi-monthly. Price, per year, paper, \$10; cloth, \$14. Philadelphia and London: W. B. Saunders Company, 1920.

DEFECTS IN MEMBRANEOUS BONES, EXOPHTHALMOS, AND DIABETES INSIPIDUS

Dr. Henry A. Christian discusses a case in a child of five years showing marked defects in the structure of the membranous bones, accompanied by exophthalmos and polyuria, the latter controlled to a marked degree by the administration of pituitary substance subcutaneously. The administration of pituitary had no effect on the bone defects, nor was the polyuria controlled when the gland substance was given by mouth. Only two other similar cases are reported in the literature. A résumé of the findings in these cases is given. Both showed disturbed pituitary function.

DIABETES OF LONG DURATION. SEVERE DIABETES VERSUS SEVERE ACIDOSIS IN DIABETES

Dr. Elliott P. Joslin presents two cases, the one having first shown definite symptoms of diabetes twenty-three years ago, the other having had diabetes for twenty-one years. Both cases had had unusually good care. In contrast are given data showing the average duration of life in 480 living cases of diabetes to be 7.6 years and in 720 fatal cases, 5.4 years.

Dr. Joslin also presents a case of severe acidosis with the outline of the treatment instituted, resulting in the gradual disappearance of acidosis and an increased tolerance for carbohydrates (26 grams on 20 calories per kilogram body-weight).

PERICARDITIS

Dr. William H. Robey, Jr., presents a case of adherent pericarditis with an able discussion of the physical signs of this condition. His second case is that of a girl with pericardial effusion following rheumatic fever. These two cases are compared and the difficulties encountered in distinguishing between the two conditions pointed out.

MALIGNANT DISEASE OF THE LUNGS

Dr. Edwin A. Locke. A careful differential diagnosis of this disease is included in this case report. The new growth in the lung was secondary to a hypernephroma.

STUDIES IN FOOD POISONING

Dr. M. J. Rosenau. The results of the careful investigation of 1,750 cans of food (of which about 12 per cent were found to contain living bacteria), eaten by a group of volunteers, are given in some detail. None of the group suffered ill effects that could be attributed to the canned food or contaminating organisms.

VASCULAR HYPERTENSION

Dr. James P. O'Hare presents two cases with the object of showing two of the three usual causes of death in this disease,—cerebral hemorrhage and renal insufficiency. The third cause (cardiac failure) is not touched upon. The first case is one of hypertension of indefinite etiology, but having a familial tendency to degenerative diseases. Moreover, he was a hard-working, worrying man, with many responsibilities. Dr. O'Hare considers all these factors significant. The second case had a definite etiological factor (syphilis). When first under observation this patient showed hypertension, but no renal involvement. The latter condition developed fairly rapidly and death was apparently due to uremia.

GOUT

This extensive contribution by Dr. C. W. McClure includes the histories and findings in thirteen cases of gout. The diagnosis is based on the histories, the presence of tophi, and, in a majority of the cases, an increase of uric acid in the blood (more than 3 mg. per 100 c.c.).

CHRONIC GASTRO-INTESTINAL SYMPTOMS

Dr. George R. Minot contrasts two cases showing anemia and giving a long history of ill-defined gastrointestinal disturbances. In the first case, the diagnosis of pernicious anemia was finally made, although the picture was at first obscured by misleading Röntgen ray reports. The blood studies were not typical except

that a color-index greater than 1 was present. This is always significant. The second case showed a secondary anemia with a minus-1 color index, and a diagnosis of intestinal indigestion was obvious from the other findings.

CERTAIN TYPES OF PNEUMONIA AND SERUM TREATMENT

Dr. Frederick T. Lord presents a case of lobar pneumonia, and discusses the diagnosis and treatment. The value of antipneumococcic serum, when the Type I pneumococcus is the causative organism, is brought out, and the necessity for its use early in the course of the disease, with proper precautions to avoid anaphylaxis, is emphasized.

THE DIAGNOSTIC VALUE OF ELECTROCARDIOGRAPHY OF HEARTS BEATING REGULARLY

Dr. Paul Dudley White takes up, in a clear and concise manner, the electrocardiogram and its interpretation. He also presents twenty-one cases to illustrate twelve separate conditions which may present a normal and regular pulse, but in which the electrocardiograms will show abnormalities.

ALBUMINURIA IN YOUNG MEN

Dr. Roger I. Lee discusses the frequency of occurrence of albuminuria in apparently healthy young men. His observations show that approximately 5 per cent will show albuminuria at time of examination.

ASTHMA, HAY FEVER, AND ALLIED CONDITIONS

Dr. Francis M. Rackemann discusses the theories of the causes of these phases of one condition,—hypersusceptibility to foreign protein. He points out that the diagnosis must be based on a careful history of susceptibility and familial idiosyncrasy, physical examination, and reaction to the various purified proteins by means of the skin test. He also brings up the use of desensitizing doses of the protein in question. The use of this method is limited to those proteins that are soluble in non-irritating media. There is some danger in their use by unskilled hands.

HYPERTHYROIDISM—TOXIC GOITER

Dr. James H. Means gives his views of the helpful value of basal metabolism studies in (1) establishing the diagnosis of hyperthyroidism, (2) determining the proper treatment, (3) determining the success of the treatment instituted. The value of carefully kept pulse rate and weight curves in conjunction with the metabolism level is emphasized. Numerous illustrative cases and charts are used.

SURGICAL ANESTHETICS IN DIABETES MELLITUS

Dr. Reginald Fitz studied forty-five diabetics who came to operation at the Massachusetts General Hospital, and concludes that (1) no diabetic with an acutely infectious process is as good a surgical risk as one without infection; (2) a pre-operative course of treatment whenever possible is essential to minimize the dangers of operation in a diabetic; (3) the risk of any operation for a properly prepared non-infected diabetic case is slight; (4) the anesthetics of choice are (a) local for minor operations, (b) gas-oxygen for major.

WHOOPIING COUGH

Dr. Fritz B. Talbot discusses this disease from every

angle. He recommends the use of fresh vaccine for immunizing and for treatment if it can be given early.

THE TREATMENT OF THE PSYCHONEUROTIC

Dr. Stanley Cobb cites three cases which he classifies as psychoneurotics, with his method of analyzing and assembling the histories and symptoms for purposes of study and treatment. The author states that an intimate study of the individual's personality is necessary for successful treatment.

LABORATORY DIAGNOSIS

Dr. Lesley H. Spooner takes up briefly a large number of the common laboratory aids to diagnosis.

FLOYD O. WOODWARD.

REPORTS OF SOCIETIES

FORTY-SECOND ANNUAL MEETING OF THE MONTANA STATE MEDICAL ASSOCIATION JULY 14 AND 15.

This year's annual meeting of the Montana Association promises to be an interesting and helpful one. The program, given below, is an excellent one as regards the subjects to be considered, while the men who are to present papers are among the best medical writers in the Northwest.

The meeting of the State Public Health Association, first preceding the meeting of the State Medical Association, will be attended by several men of national reputation.

The social side of the meeting will be well cared for.

PROGRAM

WEDNESDAY, JULY 14, 9:30 A. M.

- 1 Address of Welcome—Governor Sam V. Stewart of Montana.
- 2 Response for the Association—Dr. Harmon T. Rhoads, Chouteau.
- 3 Report of the Secretary—Dr. Elmer G. Balsam, Billings.
- 4 President's Address—Dr. E. M. Larson, Great Falls.
- 5 Lethargic Encephalitis—Dr. F. B. Clarke, Billings.
- 6 Direct Examination of Bile by Means of Duodenal Drainage—Dr. G. E. Brown, Miles City.
- 7 The Meltzer-Lyon Method of Biliary Drainage and Its Surgical Application—Dr. W. H. Buskirk, Miles City.
- 8 Abdominal Incisions—Dr. E. P. Quain, Bismarck, N. D.
- 9 The Diagnosis of Gastric Carcinoma, with Special Reference to Its Radiological Aspect—Dr. J. H. P. Gauss, Rochester, Minn., and Lewistown.
- 10 Surgery of Gastric Cancer—Dr. Fred F. Attix, Lewistown.
- 11 Mastoidectomy under Local Anesthesia—Dr. L. G. Dunlap, Anaconda.
- 12 Basic Metabolism in Exophthalmic Goiter—Dr. Caroline McGill, Butte.
- 13 Common Pediatric Problems—Dr. J. J. Tilton, Spokane.

THURSDAY, JULY 15, 1920, 9:30 A. M.

- 14 Interpretation of Wassermann Reactions—Dr. E. D. Hitchcock, Helena.
- 15 Old Fractures—Dr. M. S. Henderson, Rochester, Minn.
- 16 How the Medical Profession Appears to the People—Judge A. C. Spencer, Yellowstone District, Billings.
- 17 A paper on some phase of his work—Dr. F. M. Pottenger, Monrovia, Cal.
- 18 Translation of a Paper from the German War Zone, with Remarks—Dr. T. C. Witherspoon, Butte.
- 19 Radium and Radium Therapy—Dr. A. C. Jones, Butte.
- 20 A Discussion on Radium—Drs. Harold Schwartz, of Butte, and J. G. O'Brien, of Belt.

NEWS ITEMS

Dr. W. A. Thomas, of Solen, has moved to South Dakota.

Dr. Warner Ogden, of St. Paul, was married last month to Miss Margaret Sweet, of New York.

The Montana State Medical Association holds its annual meeting on July 14th and 15th in Great Falls.

Dr. Arnold L. Hamel, of Minneapolis, was married last month to Miss Lucy Gibbs, also of Minneapolis.

Drs. E. M. McLaughlin, B. P. Rosenberry, and W. W. Nauth, of Winona, have formed a partnership.

Dr. R. G. Doupe, who formerly practiced at Upsala, has become associated with Dr. E. E. Hall, of Little Falls.

Dr. L. W. Kline, of Duluth, has returned from Johns Hopkins, where he has been doing research work during the past year.

Dr. Harlow J. Hanson, of New London, was married last month to Miss Beatrice MacFarland, formerly of New York.

Dr. R. S. Westaby, of Madison, S. D., was recently in the Twin Cities purchasing equipment for the new hospital at Madison.

Dr. E. R. Lindner, who attained the rank of major in his war service, has been discharged, and will resume practice in Munich, N. D.

Dr. A. J. Clay, of Bowden, N. D., has sold his practice and will spend several months in the East doing postgraduate work in internal medicine.

Dr. William P. Herbst, of Rochester, was married last month to Miss Catherine Meredith Arnold, of Chicago, Ill. The wedding took place at Lake City.

Dr. G. M. Williamson, of Grand Forks, N. D., last week delivered the address to the graduating class of nurses of Lakeside Hospital of Kenmare, N. D.

Dr. Charles Pixley, who has practiced in Missoula, Mont., for twenty-five years, has retired from practice, and will go to the coast for an extended visit.

The Chiropodists of Montana held their annual meeting in Helena last month, and decided to ask the next state legislature to regulate the practice of the sect.

Dr. George Brown, of Miles City, Mont., upon invitation, presented a paper before the Silver Bow County Medical Society at Butte, Mont., last month upon "Acute Infectious Aortitis."

Dr. A. F. Plankers, of St. Paul, who went abroad with the University Base Hospital Unit three years ago, is expected home soon after his commission expires, which will be this month.

Dr. Carl D. Kolset, of Benson, has gone to Norway to bear a gift of \$10,000 from the Nordfjorlag of America to the worthy poor of Nordfjordeid. The presentation will be made on July 4th.

The Governor of North Dakota has appointed Dr. J. A. Halgren, of Bismarck, a member of the State Board of Health, to succeed Dr. H. O. Cooperman, of Minto, who resigned to do postgraduate work in the east.

"Doctor" John Till has been again to the supreme court of Wisconsin and got confirmation of his sentence to serve six months in jail for practicing without a license. John Till and the courts of Wisconsin have played hide-and-seek for many years.

The University of Rochester, N. Y., is to receive \$5,000,000 from the Rockefeller General Education Board and \$4,000,000 from Mr. George Eastman, of Rochester, for a medical school and a teaching hospital. "Rochester" is truly a great name in medical circles.

Dr. H. S. French, a recent graduate of the University of Minnesota, who has just completed a year's internship at the General (City) Hospital of Minneapolis, has become associated with Dr. F. L. Kling at Milaca, which is now the county seat of Mille Lacs County.

Dr. Edward D. Anderson, a graduate of the University of Minnesota Medical School, who has been doing postgraduate work in the East for several months, is now located in the La Salle Building (Suite 730), Minneapolis. Dr. Anderson's practice is limited to diseases of infants and children.

THE JOURNAL-LANCET was continued as the official journal of the North Dakota State Medical Association by a unanimous vote at the annual meeting of the Association held last month, and the subscription price was doubled by a like vote. Comment upon this action is made in our editorial columns.

The Rockefeller Foundation has just announced a gift of several million dollars to the University College and Hospital School of London for the erection of new buildings and as an endowment for the medical school, which is destined to become one of the great medical teaching centers of the world.

Dr. Charles E. Hunt, of the firm of Witherstine, Wilson, Hunt, Anderson & Miller, of Grand Forks, N. D., has left for a month's postgraduate work in Chicago. While there he will spend two weeks assisting Dr. Isaac A. Abt and two weeks in the Chicago Lying-In Hospital assisting Dr. J. B. DeLee.

The Fourth District of Minnesota State Registered Nurses has been incorporated. The Association is composed of graduate registered nurses of nine counties, and has its headquarters in St. Paul. Clara A. Webber is president of the Association; Anna L. Corcoran is recording secretary, and Delia S. O'Brien is treasurer.

The new fees of the Red Wing physicians show changes as follows: City calls increased from \$2.00 to \$3.00, with \$1.00 extra for night calls; office calls increased from \$1.00 (minimum) to \$1.50 (minimum); obstetrical cases, \$25.00 (minimum); tonsillectomies, \$35.00 (minimum); out of town calls increased from \$1.00 to \$1.50 a mile.

Dr. R. R. Parker, the entomologist of the State Board of Health of Montana, who devotes his entire time to fighting the Rocky Mountain spotted fever, believes the fever tick is carried by the snowshoe rabbit, which is the only animal found to be immune to the disease. Some years ago THE JOURNAL-LANCET published a paper on the fever by Dr. Robert Chowning of this city, who had done considerable research work on the subject.

The Governor of Montana has made the following medical appointments: Dr. S. A. Cooney, of Helena, for the seven-year term on the State Board of Health; Dr. E. Porter, of Great Falls, for the five-year term on the same Board; and Dr. A. W. Deal, of Lewiston, a member of the State Board of Medical Examiners to succeed the late Dr. F. J. Adams, who was killed in an auto accident last month.

Dr. James Mattison, head of the Battle Mountain Sanitarium at Hot Springs, S. D., for nine years, has been given a well-earned promotion by the government. He has been made chief surgeon of ten branches of the government's national home for disabled soldiers, of which the Battle Mountain Sanitarium is one. The citizens of Hot Springs tendered Dr. Mattison a farewell banquet one evening of last week.

The Catholic Hospital Association of the United States held its fifth annual meeting in St. Paul last week. Nearly 2,000 representatives from the Catholic hospitals of the United States and Canada were present. These people were, in the main, physicians, surgeons, nurses, and superintendents. Every possible phase of hospital work was discussed intelligently and thoroughly. Editorial mention of the meeting will be found on another page.

A graduate fellowship in the University of Minnesota is to be supported by the Hennepin County Tuberculosis Association. The fellowship will amount to \$750 for the first year and be somewhat larger for the two succeeding years. The holder will devote his entire time to the study of some antituberculosis problem. The opportunities for such work furnished by the clinical facilities of the University, the laboratory, and the sanatoriums of the Twin Cities, are unsurpassed.

The Mitchell (S. D.) District Medical Society held its midsummer meeting last month at Mitchell. Papers were presented by Dr. Earl R. Hare, of Minneapolis, Minn; Dr. T. B. Smiley, of Mt. Vernon; Dr. Fred Treon, of Chamberlain; Dr. J. C. Ohlmacher, of Vermilion; Dr. J. G. Parsons, of Sioux Falls; Dr. Ray A. Kelly, of Mitchell; Dr. Clara McManus, of Gann Valley; and Dr. C. C. Bobb, of Mitchell. A banquet for the doctors and a theater party for their wives added pleasure to the evening.

The fifteenth semi-annual meeting of the Sioux Valley Eye and Ear Academy will be held at the Hotel Fontenelle, Omaha, Wednesday, July

14, 1920. A very profitable program has been arranged for the afternoon and after our "get together" supper. How they do things in Missouri will be told by our guests: Dr. E. J. Curran, of Kansas City, Professor of Ophthalmology in the University of Kansas School of Medicine; Dr. T. S. Blakesley, of Kansas City; Dr. Meyer Wiener, of St. Louis.—DR. L. N. GROSVENOR, M. D., Secretary.

At the annual meeting of the North Dakota State Medical Association, held in Minot on June 15th and 16th, the following officers for the current year were elected: President, Dr. Fred Ewing, Kenmare; president-elect, Dr. H. E. French, University; first vice-president, Dr. E. P. Quain, Bismarck; second vice-president, Dr. W. C. Fawcett, Starkweather; secretary, Dr. H. J. Rowe, Lisbon; treasurer, Dr. J. P. Aylen, Fargo; delegate to the A. M. A., Dr. E. A. Pray, Valley City; alternate, Dr. A. J. McCannel, Minot; councilors for three years, Dr. P. H. Burton, Cass and Richland Counties, Dr. F. R. Smyth, Sixth District and Stark County, and Dr. G. M. Williamson, Grand Forks District. The next annual meeting will be held at Fargo in 1921.

LOCUM TENENCY WANTED

Locum tenency in North Dakota wanted for July or August, or will consider good permanent location. Address 355, care of this office.

HIGH-GRADE X-RAY TECHNICIAN WANTED

A firm of physicians and surgeons in Montana will give permanent employment at good wages to a high-grade x-ray technician. Address 345, care of this office.

LOCUM TENENCY WANTED

A physician of ten years' experience in general practice, and the highest of references, desires a position as locum tenens for a month or longer. Address 357, care of this office.

LOCUM TENENS POSITION WANTED

A University of Minnesota graduate who has finished his internship in the City Hospital of Cleveland, Ohio, desires substitute work for the summer somewhere in the Northwest. Address 358, care of this office.

BOOKS AND ELECTRICAL APPARATUS FOR SALE

I offer for sale my late husband's books (about 200 vols.), sectional bookcases (12 sections), and a complete Campbell chair and Model "E" X-ray High Frequency Coil with accessories. For full particulars call on Mrs. Ida Blomburgh, 1910 Columbus Ave., Minneapolis (Telephone, Automatic 51 651).

PRACTICE FOR SALE

Unopposed village and country practice, amounting to over \$4,000 a year, for sale. Centrally located. Nearest opposition is 8, 12, 14, and 18 miles. Collections, 99 per cent. A few fixtures and practice go for \$500 cash. Will thoroughly introduce. Address 354, care of this office.

LOCATION OR AFFILIATION WANTED

A young physician with considerable surgical experience, who has spent the past year since leaving war service in a surgical hospital, seeks an affiliation with a good man in the country or will buy a country practice. Address 350, care of this office.

GOOD LOCATION FOR A PHYSICIAN

A new modern office in a fine and rapidly growing residence district of St. Paul can be had for \$15.00 a month. Two or three colleges are near at hand, and physicians in this district find many patients in the nearby and fine commercial district. Address 719 North Hamline, St. Paul, or telephone N. W. Midway 0173.

SURGICAL ASSISTANTSHIP WANTED

A physician with fifteen years of general work, having done considerable emergency surgery for milling and mining companies, desires an assistantship to a busy surgeon. A living salary for the first year would be satisfactory. An American, aged 42, married, good health, habits good, graduate University of Minnesota. Have specialized somewhat in tendon work, particularly of the hands and fingers. Address 356, care of this office.

GOOD MINNEAPOLIS OFFICE FOR PHYSICIAN OR DENTIST FOR RENT

For rent by July 1 office room in modern building for doctor or dentist. Rent reasonable. Location, Thirty-first Street and Hennepin Avenue (3047) in the best section of City. Phone Kenwood 7065 or write Mrs. A. Quam at above address.

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AN EASY-TO-USE X-RAY MACHINE.

Messrs. H. G. Fischer & Co., recognizing the fact that every physician should have in his office an x-ray machine to locate foreign bodies in the system and to set fractures properly, devised a machine that anyone can learn to use and of moderate price.

They also maintain that such a machine means a better practice, a better diagnosis, and a better income. This is self-evident, therefore every general practitioner should consider the offer Messrs. Fischer & Co. have made. See their announcement on another page of this issue.

HORLICK'S MALTED MILK

In the long controversy between the advocates of the use of raw milk and those opposed to all kinds of prepared milk, some facts on both sides have been established, one of which is that Horlick's Malted Milk has a large place as a food for infants deprived of mother's milk, and for nursing mothers, convalescents, and the aged. As a food for even well people who have slight touches of indigestion, especially from nervous causes, it is unexcelled.

Instead of "dieting" your patients without food, try "dieting" them on a generous supply of Horlick's food and you will see the most gratifying results.

THE MEYER UNIVERSAL MULTOSCOPE

This apparatus is one of the triumphs of the modern apparatus manufacturers. It is a combination appliance designed to accomplish a specific work, and grew out of the needs of general practitioners and specialists who demand exact results.

Mr. Carl Young is the northwestern agent of the company, and he will be glad to demonstrate the apparatus to any physician, at almost any time, at his display room at 827½ Nicollet Ave.

LEDERLE AN ITOXIN LABORATORIES

It is claimed that the Pollen Antigen of these laboratories confers an average protection in hay fever cases amounting, in 12,000 cases, to 82.7 per cent; and the result of general experiments by others demonstrates that this percentage is possible of attainment when the antigen is properly prepared.

Such a percentage of cures or relief clearly indicates

that all persons subject to hay fever should systematically use a preventive of this character.

The Lederle Laboratories are located at 511 Fifth Ave., N. Y. City, and have branches in Chicago, Winnipeg and Minneapolis (633 Andrus Bldg.). Full information concerning their work and their products can be obtained from any of their offices.

PHYSICIANS' AND DENTISTS' X-RAY LABORATORY

The above-named laboratory is located in the Pillsbury Building, Minneapolis, and does only referred work, thus serving only physicians and dentists.

It is a thoroughly equipped laboratory and can do fluoroscopy and radiography. It prides itself on the character of its plates and films, whose excellence makes for exact diagnosis.

Its terms are reasonable and its work the best obtainable.

RADIUM AND X-RAY LABORATORY

As most of our readers know, Dr. C. D. Harrington is the pioneer röntgenologist of the Twin Cities and perhaps of the Northwest, and his high standing in the profession is attested by the fact that he has long been the röntgenologist of the Abbott, Asbury, and St. Mary's Hospitals, which positions he holds because he is an expert in this work.

His laboratory now has enough radium for ordinary cases, and this adds largely to the efficiency of the laboratory.

Dr. Harrington's diagnostic and therapeutic laboratory work is unexcelled.

REMOVAL OF SUPERFLUOUS HAIR

The removal of superfluous and disfiguring hair from the face by electrical needles in a painless manner is now so easily accomplished that the fact should be made known and the process recommended to every person so afflicted, and the physician is the one to do this to his patients.

Ella Louise Kellar, 447-8 Loeb Arcade, Minneapolis, has been doing this work in this city for over a year, and she came here after having established herself in New York and Chicago, where her work is still continued and is recognized by medical men as worthy of their recommendation. Physicians should know exactly how the work is done, how permanent it is, and then they should send Miss Kellar many patients.

SANDS BALFOUR ABDOMINAL RETRACTOR IMPROVED

Messrs. Sharp & Smith, of Chicago, have given the profession some of the best surgical instruments and improvements on others ever given the medical profession. Among such improved instruments is the Sands Balfour Abdominal Retractor, as illustrated in the firm's announcement on another page.

This firm has been established nearly three-quarters of a century and enjoys the reputation of making only absolutely dependable instruments, and, certainly, no other kind of surgical instrument should ever be used. The Retractor under consideration is an example of the simplicity and excellence of this firm's work, and the price of it (\$20) is also evidence of the firm's fair prices.

MERCURY IN COLLAPSULES

Mercury has been demonstrated to be absolutely essential in the treatment of syphilis and it should be used in combination with salvarsan or neosalvarsan.

The H. A. Metz Laboratories, Inc., are marketing mercury in the form of *Collapsules*, which are compressible ampules, under the names of Bichloridol and Salicidol.

Bichloridol Collapsules contain mercury bichlorid in $\frac{1}{4}$, $\frac{1}{2}$, and 1 grain doses, so prepared that maximum doses may be employed with unusual tolerance and with retarded absorption.

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These two products have the advantage of not only being convenient and giving absolute accuracy of dosage, but they reduce the pain to a minimum and do away with the "cobble-stone" buttock, which causes so much trouble.

Samples will be sent to physicians by the H. A. Metz Laboratories, Inc., 122 Hudson Street, New York City.

ANGIER'S EMULSION

Angier's Emulsion has been in use by the medical profession for a great many years, and has fully demonstrated its merits to thoughtful physicians. It is a soothing expectorant that hastens convalescence, especially for children, and its use protects the patient from dangerous after-effects. Its literature is interesting

and informing, and use of the Emulsion in one or two cases will convince the physician of its efficiency.

Samples of the Emulsion and descriptive matter will be sent free by the Angier Chemical Co., of Boston, Mass.

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Platt's Chlorides fill a want in the household recognized by all physicians—the want of a safe and odorless disinfectant for use during and after sickness in the house and to keep the house in a sweet and healthy condition all the time. It is equally useful in the hospital, and very many hospitals use the preparation all the time.

INTRAVENOUS MEDICATION

The modern practitioner of medicine, as far as possible, guards the stomach against abuse, and does so that Nature may not be handicapped in her effort to build upon the system. The necessity for thus helping the stomach to do its work unhampered led to intravenous medication, especially in the use of remedies needed in the treatment of syphilis, rheumatism, anemia, chorea, etc.

Messrs. George A. Breon & Co., of Kansas City, with branch houses in Chicago, Atlanta, and Denver, offer physicians ethical, meritorious intravenous products of high potency and low toxicity, especially their Arseno-Mer-Sodide, indicated in syphilis; Salsodide, used in the treatment of rheumatism; and Ferror-Arsen, which is used in the treatment of anemia, chorea, and chlorosis.



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The location of the beautiful building is really charming, and this alone gives encouragement to the "guests" of this hospitable home.

Notwithstanding the moderateness of the prices charged, nothing in the way of comfort or scientific treatment is omitted. Such institutions are a credit to our civilization, and the man or woman who goes to them meets a hearty welcome by all the attendants, who are there to *serve*, not to receive high wages.

We highly commend the Thomas Hospital of Minneapolis to all physicians. Rev. T. H. Dahl, D.D., is rector, and Miss Emma Odejord, R.N., is the superintendent of the hospital.

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The phenomenal success of Lavoris is not due to successful exploitation by shrewd business men, but to its merits, revealed by leading physicians and made known to the whole profession and the public by honorable business methods.

Lavoris has a zinc chloride basis, and its pleasant form and therapeutical worth has brought it into "vogue." It is an antiseptic that has a speedy and marked effect upon mucous membrane, and its long and

extensive use by physicians has made its sale enormous.

Generous samples and literature are sent free to all physicians. Address the Lavoris Chemical Company, Minneapolis, Minn.

HAY FEVER

The hay fever season is at hand, and physicians are asking themselves what to do with this distressing malady. It is idle for the general practitioner to discuss what hay fever is, for nobody knows; but he can well ask what will alleviate the distress of his patient afflicted with it and unable to resort to a change of climate.

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Several years ago the Laboratory of Surgical Technique was established under the directorship of Dr. E. A. Printy in Chicago. Its purpose is to give a brief course of intensive individual instruction to surgeons who know just what they want to learn through actual practice, in which the surgeon does the work under the guidance of Dr. Printy.

Their announcement, found on another page, gives the particular list of operations which are thoroughly taught in the seven days of the course, and, we believe, every student who has taken the work says it is exceedingly helpful, being far beyond what was expected by him when he entered upon it.

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The results obtained at a high-grade sanitarium, such as that named above, from treatment that is indicated after careful examination by a physician, are so gratifying that practically all who spend even a short course find relief from some very annoying forms of disease, which are often untouched by medication. The list of such forms of disease are well known to physicians, as are the results obtained from the sulphur baths and the

accompanying health measures taken at a modern sanitarium, such as that at Jordan, "The Home of Sulphur Springs."

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THE MINNEAPOLIS CLINICAL LABORATORY

The above is the oldest clinical laboratory in the Northwest, Dr. Ulrich having been a pioneer in this work; moreover, he conducts a real clinical laboratory, not only making all the usual, as well as the unusual laboratory tests, but interpreting the results.

Dr. Ulrich's personal work is that of a consultant, and he is recognized throughout the Northwest as an expert in diagnosis, especially diagnosis dependent upon laboratory tests.

His laboratory does highly successful work in the manufacture of autovaccine.

Dr. Ulrich is now associated with the Eitel Hospital, where he has his office.

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The Gluek Brewing Company, of Minneapolis, believes it has produced a beverage in "Glix" that possesses all the essential qualities of beer, and this without the usual percentage of alcohol. The hops and other ingredients of beer are found in Glix, as is also a small and large enough percentage of alcohol.

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Minnesota, North Dakota, South Dakota, and Montana
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No. 14

TRANSACTIONS OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION—THIRTY-NINTH ANNUAL MEETING 1920

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YANKTON DISTRICT

DR. FRANK CONGER SMITH. Yankton

DR. L. F. BEALL. Irene

BLACK HILLS DISTRICT

DELEGATE

DR. J. W. FREEMAN. Lead

ALTERNATE

DR. A. S. JACKSON. Lead

ROSEBUD DISTRICT

DR. F. A. BRYANT. Herrick

PLACE OF NEXT MEETING—ABERDEEN

Proceedings of the House of
Delegates

FIRST SESSION, TUESDAY, MAY 18, 1920

The House of Delegates met at the Cataract Hotel, Sioux Falls, May 18, 1920, at 2:30 P. M., and was called to order by the President, Dr. R. D. Alway, Aberdeen.

On roll-call the following responded: Dr. F. A. Spafford, Flandreau; Dr. J. F. D. Cook, Langford; Dr. E. O. Giere, Watertown; Dr. H. M. Freeberg, Watertown; Dr. R. S. Westaby, Madison; Dr. E. B. Taylor, Huron; Dr. W. J. Maytum, Alexandria; Dr. T. E. Jones, Sioux Falls; Dr. J. G. Parsons, Sioux Falls; Dr. L. F. Beall, Irene; Councilors, Dr. C. S. O'Toole, Watertown; Dr. N. K. Hopkins, Arlington; Dr. L. N. Grosvenor, Huron.

PRESENT MEMBERSHIP

The Secretary announced the present membership of the Association as follows:

Aberdeen (1st) District.....	109
Watertown (2d) District.....	28
Madison (3rd) District.....	18
Pierre (4th) District.....	8
Huron (5th) District.....	27
Mitchell (6th) District.....	34
Sioux Falls (7th) District.....	52
Yankton (8th) District.....	51
Black Hills (9th) District.....	32
Rosebud (10th) District.....	11
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Total	370

EXPLANATION—According to the returns from the secretaries of the different district societies the number of members in good standing at present is 370. From the receipts, at \$3.00 per capita, the number would be 372.

Under the head "Standing Committees," the President called for the report of the Committee on Legislation and Public Policy.

The only member of this committee present was Dr. E. O. Giere, who stated that he had not heard from the other two members of the committee, and therefore he had no report to make for the committee at this time.

The report of the Committee on Health and Public Instruction was called for and passed temporarily in the absence of two members of the committee.

The report of the Committee on Hospitals having been called for, the Secretary stated that Dr. McCauley, Chairman of this committee, had in-

formed him that all the hospitals had made their reports to the American Medical Association, and that he had no report to make at this time.

The President called for the report of the Committee on the Revision of the Constitution and By-Laws.

The Chairman of this committee, Dr. F. A. Spafford, stated that nothing had been done as the American Association were revising their Constitution and By-Laws and it was deemed advisable to defer action. However, he had written to the different members of the committee, asking them to jot down what changes they thought ought to be made in the present Constitution and By-Laws. He also wrote to the American Medical Association for a number of copies of their revised Constitution and By-Laws, and received word from the American Medical Association that they had no copies available at present, but that the new Constitution and By-Laws, adopted at New Orleans, was in press, and as soon as issued, copies would be furnished on application.

Dr. Spafford stated that he went over the old Constitution and By-Laws of the Association, and it appeared to him as if it was antiquated and should be brought up to date. He suggested that the members of the House of Delegates take a copy of the present Constitution and By-Laws, go over it, and jot down any changes they thought ought to be made and submit them at a meeting of the House of Delegates.

A report from the Committee of Arrangements was called for, and in the absence of Dr. G. G. Cottam, chairman of the committee, Dr. J. G. Parsons, a member of the committee, stated that the committee had nothing to report further than to submit the program as the report of the committee. The annual banquet would be held today at 8 P. M.

The President announced as the next order of business the appointment of committees.

The following delegates were nominated as the Committee on Nominations:

Dr. T. E. Jones, Sioux Falls; Dr. E. O. Giere, Watertown; Dr. E. B. Taylor, Huron; Dr. E. W. Jones, Mitchell; Dr. R. S. Westaby, Madison; Dr. J. F. D. Cook, Langford; Dr. L. F. Beall, Irene; Dr. F. E. Clough, Lead; Dr. J. C. Waterman, Burke.

Dr. J. G. Parsons moved that the President appoint a Committee on Necrology.

Seconded and carried.

The President appointed on this committee

the following: Dr. J. B. Vaughn, Castlewood; Dr. S. M. Hohf, Yankton; and Dr. F. A. Spafford, Flandreau.

The revision of the Constitution and By-Laws was again taken up.

Dr. Cook called attention to the new Constitution and By-Laws adopted by the House of Delegates of the American Medical Association at the New Orleans meeting, and suggested that the revision of the Constitution and By-Laws of the South Dakota State Medical Association be held over until the Secretary had received copies of the revised Constitution and By-Laws of the American Medical Association.

Dr. L. N. Grosvenor moved that the President appoint a committee of three to revise the Constitution and By-Laws in accordance with the new revision of the Constitution and By-Laws of the A. M. A. and submit the report at the next annual meeting.

Seconded by Dr. Waterman, and carried.

The Secretary presented an invitation for the Association to hold its session in 1922 in the City of Huron.

On motion, the House of Delegates adjourned subject to the call of the President.

SECOND SESSION, THURSDAY, MAY 20, 1920

The House of Delegates met at 9:30 A. M., and was called to order by the President.

The following delegates were present: Dr. J. F. D. Cook, Dr. F. A. Spafford, Dr. E. O. Giere, Dr. E. B. Taylor, Dr. F. E. Clough, Dr. L. F. Beall, and Dr. H. M. Freeberg.

The Secretary read a telegram from the West Virginia State Medical Association extending greetings and best wishes for a successful meeting.

It was moved and seconded that the Secretary be instructed to answer this by sending a similar telegram of greetings.

Carried.

Dr. J. F. D. Cook presented an oral report as delegate to the American Medical Association. He said:

"One thing that interests the profession at this time is the following resolution which was passed by the House of Delegates of the American Medical Association regarding health insurance:

"RESOLVED, That the American Medical Association declares its opposition to the institution of any plan embodying the system of compulsory and contributory insurance against illness, or any other plan of compulsory insurance which provides for medical service to be rendered contributors or their dependents, provided,

controlled, or regulated by any state or the Federal Government."

The House of Delegates of the American Medical Association also adopted the following resolution:

"RESOLVED, That the Council on Health and Public Instruction be instructed to investigate the relative adequacy of medical service and relations of the profession to the public and report at the next annual session."

Dr. F. F. Russell, United States Army, spoke of the necessity of having published the medical and surgical history of the world war, and stated that the Surgeon-General of the Army had asked Congress to appropriate \$150,000.00 for this purpose. A committee of three was appointed by the Speaker to draft a resolution approving in principle the use of this money by Congress for this purpose. This matter was likewise referred to the secretaries of the different state associations to use their influence on the legislators at Washington, and asking that they support this appropriation.

The new Constitution and By-Laws was presented to the House of Delegates and adopted.

There was also brought before the House of Delegates by a delegate from Maryland (Dr. Cullen) the matter of publication of a daily newspaper by the Association, which was laid on the table.

The Speaker in his address to the House of Delegates advised reducing the number of trustees from nine to seven or five, and of dividing the United States into trustee districts. This matter was referred to the Judicial Council.

Then came the election of officers, with the following result: President, Dr. Hubert Work, Pueblo, Colorado; Vice-President, Dr. Isadore Dyer, New Orleans; Secretary, Dr. Alexander R. Craig, Chicago; Treasurer, Dr. William Allen Pusey, Chicago. The other vice-presidents were done away with by adopting the new Constitution and By-Laws. Boston was selected as the next place of meeting.

The President stated that he was glad to hear the report of Dr. Cook of what was done in the House of Delegates of the American Medical Association, and that what Dr. Cook had said would be incorporated as a part of the proceedings.

The President then called for the report of the Nominating Committee. Dr. Cook, a member of the committee, made the following report:

President—Dr. H. T. Kenney, Pierre.

First Vice-President—Dr. G. S. Adams, Yankton.

Second Vice-President—Dr. G. G. Cottam, Sioux Falls.

Councilor of the First District—Dr. J. F. D. Cook, Langford.

Councilor of the Eighth District—Dr. J. P. Isaac, Freeman.

Councilor of the Watertown District—Dr. E. O. Giere, Watertown.

Councilor of the Tenth District—Dr. F. E. Clough, Lead.

Delegate to the American Medical Association—Dr. R. D. Alway, Aberdeen.

Alternate Delegate—Dr. T. F. Riggs, Pierre.
Place of next meeting, Aberdeen.

Dr. Taylor moved that the report of the Nominating Committee be accepted as presented.

Seconded and carried.

ELECTION OF OFFICERS

There were three nominees for President—Drs. Kenney, Taylor, and Freeberg.

Drs. Taylor and Freeberg withdrew in favor of Dr. Kenney.

Dr. Cook moved that Dr. Kenney be made the unanimous choice of the House of Delegates for president for the ensuing year; that the rules be suspended, and that the Secretary be instructed to cast one vote for Dr. Kenney.

Seconded and carried.

The Secretary cast the ballot as instructed, and Dr. Kenney was declared duly elected President.

Dr. Clough moved that the Secretary be instructed to cast the unanimous ballot of the House of Delegates for all the other men mentioned in the report of the Nominating Committee.

Seconded and carried.

The Secretary cast the ballot as instructed, and all the nominees were declared duly elected.

The Auditing Committee reported as having examined the books of the Secretary-Treasurer and found them correct.

It was moved that the report be accepted.

The Secretary presented a communication from the Bureau of American Red Cross in regard to a Speaker's Bureau.

The Secretary also read the following communication from Dr. N. P. Colwell, Secretary of the Council of Medical Education of the American Medical Association, and his reply thereto, as follows:

535 No. Dearborn St., Chicago,
May 13, 1920.

Dr. Frederick A. Spafford, Secretary,
State Medical Association,
Flandreau, South Dakota.

Dear Doctor Spafford:

The work for the betterment of hospital service is extremely broad, and will require continuous effort, so that the hospital committee in each state should be made permanent. Would it not be well to have your committeemen appointed so that the term of office of one member will expire each year and also to make provision for the prompt filling of all vacancies that may occur through the death, resignation, or removal of any member?

You doubtless recognize the importance of retaining on this committee men who are not only active but who also are in a position to prepare the most unbiased and reliable reports in regard to the hospitals of the state.

Appreciating your co-operation, we are

Very sincerely yours,

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS.

Per N. P. Colwell, Secretary.

Flandreau, South Dakota, May 16, 1920

Council on Medical Education and Hospitals,

American Medical Association,

N. P. Colwell, Secretary,

Chicago, Illinois.

My dear Secretary:

Your letter of recent date in regard to the appointment of a committee on hospitals which should be a permanent and continuing one has been received. In reply will state that this is one of the matters I will bring up before the State Association and will see that your recommendations are followed out as far as possible. I wish that some one from the American Medical Association could come to Sioux Falls during this meeting as he might be of great service. The time, however, is rather limited. With kindest personal regards. I am,

Very sincerely,

F. A. SPAFFORD, Secretary-Treasurer.

Dr. Cook moved that the Committee on Hospitals be reappointed for the ensuing year.

Seconded and carried.

The Secretary presented the following communication from Dr. Mabel S. Ulrich, of Minneapolis, and his reply thereto:

Minneapolis, Minn., May 14, 1920.

Dr. F. A. Spafford, Secretary,
South Dakota State Medical Society,
Flandreau, South Dakota.

My dear Doctor:

In my capacity of Director of Health Service in the Northern Division of the American Red Cross I am eager to get underway a series of ambulatory clinics to be given in South Dakota in those communities especially which are remote from medical care. The idea of these clinics is that we shall have physicians, who are specialists in certain lines of work and located in different parts of the state, who will agree for the consideration of twenty-five dollars per day and expenses to go for a day at a time into communities, which have been thoroughly worked over and prepared by a nurse, and in which adequate opportunities for follow-up work will be provided.

I have written to Dr. McCauley, of Aberdeen, asking his advice as to the selection of the physicians, and we are agreed that it would be best to have a list submitted by the State Medical Association of men who they would feel were qualified to do work along the lines of nose and throat, eye and ear, and tuberculosis. I have asked Dr. Zimmerman to do the work in infant and child welfare, and I hope to get several dentists who will carry on this aspect for us.

It should be perfectly clear to the physicians of the state that the purpose of these clinics is to be diagnostic

in character and that treatment will be given only to those patients whose inability to pay physicians' fees has been thoroughly established previous to the doctor's coming. Moreover, while we realize that twenty-five dollars per day is not an adequate fee, many of the best physicians of Minnesota have found it worth while to do this work on this basis, and they have added materially to their reputation throughout the state thereby.

Dr. McCauley has written me that he will see you at the state meeting, May 18, 19, and 20, and may I urge that you give this matter your earnest attention and do all in your power to obtain the approval of this project.

Very truly yours,

MABEL S. ULRICH, M. D.,
Director Health Service.

Flandreau, South Dakota, May 16, 1920.

Mabel S. Ulrich, M. D.,
Director of Health Service,
American Red Cross,
Minneapolis, Minn.

My dear Doctor Ulrich:

Your letter of the 14th inst. in regard to a series of ambulatory clinics to be given in South Dakota has been received. In reply I will state that I shall be only too glad to take this matter up in the State Medical Association this week in Sioux Falls. I am sending you a copy of the program, which you will see is very strong along health lines. I am sorry that we did not think of you for a paper. I was disappointed in not securing Mrs. Bessie M. Haasis, of New York City, one of the educational secretaries of the National Organization of Health Nurses.

I think that we have done fairly well the past year in introducing some new health features in our state educational institutions. In the Aberdeen Normal School, as you probably know, we are co-operating with the Federal Government in an Inter-Departmental Department of Hygiene, in which Dr. Zimmerman is associated.

The Regents of Education, last fall, authorized the establishment of a postgraduate course for the instruction of graduate nurses, in connection with the University of South Dakota. This has been accomplished, and Miss Margaret Hughes, of New York City, has been elected as Director of Public Health in the University. Courses will open in the fall.

If you have the time I wish that you could come to Sioux Falls next Wednesday and discuss some of these propositions with us. Will you not do so? You can leave Minneapolis Tuesday evening reaching Sioux Falls early Wednesday morning and return in the evening if you so desire. Dr. Bracken and Mr. Whittaker will probably be on this train.

With kindest personal regards, with the assurance that I will always be glad to co-operate, I am,

Very sincerely,

F. A. SPAFFORD, M. D.,
Secretary-Treasurer,
South Dakota State Medical Association.

Dr. Cook moved that the Secretary be instructed to appoint a man in each county.

Seconded and carried.

The matter of raising the dues was discussed freely from all angles, after which Dr. Giere

moved that the House of Delegates recommend that the dues be increased to \$10.00 (\$4.00 for the District Society and \$6.00 for the State Association); that the Secretary be instructed to correspond with the presidents and secretaries of the district societies and request them to discuss this matter, and that a meeting of the House of Delegates be called sometime during the year.

Seconded and carried.

The Secretary read the following communication from THE JOURNAL-LANCET with reference to publishing the proceedings of the Association:

Minneapolis, Minn., May 12, 1920.

To the Councilors of the
South Dakota State Medical Association.
Gentlemen:

THE JOURNAL-LANCET will be pleased to have the present publication arrangement with your Association continued either for one year or longer subject to cancellation at any time by the House of Delegates or as you may specify.

As you, of course, know, the cost of publishing the paper at the present standard of mechanical excellence has become almost prohibitive. Because of this fact, we earnestly ask you to advance the subscription price to your members to \$2.00 each to take effect at such time as you may designate.

Permit us to express our high appreciation of the past pleasant relations between your Association and this paper, inclusive of the editor and the publisher.

Very truly,

THE JOURNAL-LANCET.

By W. L. Klein.

It was moved that the House of Delegates recommend to the Board of Councilors that THE JOURNAL-LANCET be given one dollar and fifty cents until the first of January, 1921; and \$2.00 after that date if the present high prices continue.

Seconded and carried.

The Secretary brought up the matter of weights and measures, which was discussed by Dean Akeley in the general meeting.

It was moved and seconded that the Secretary write a letter in regard to this matter, urging the adoption of the metric system. Carried.

The President appointed as a committee to revise the Constitution and By-Laws, Drs. H. T. Kenney, F. A. Spafford, and J. F. D. Cook.

The Committee on Necrology reported that, owing to lack of data in regard to the deceased, their report would have to be supplementary and published in THE JOURNAL-LANCET after such information had been obtained.

Seconded and carried.

On motion, duly seconded and carried, the House of Delegates then adjourned *sine die*.

F. A. SPAFFORD, M. D., Secretary-Treasurer.

PROCEEDINGS OF THE BOARD OF
COUNCILORS

FIRST SESSION, TUESDAY, MAY 18, 1920

The Board of Councilors met at Hotel Cataract at 3:30 P. M., Tuesday, May 18, 1920, and was called to order by the President of the Association, Dr. R. D. Alway, Aberdeen.

(Dr. Wm. Edwards, of Bowdle, President of the Council, deceased.)

There were present Dr. F. A. Spafford, Flandreau; Dr. L. N. Grosvenor, Huron; Dr. N. K. Hopkins, Arlington; and Dr. C. S. O'Toole, Watertown.

The Secretary-Treasurer presented his financial report as follows:

FINANCIAL REPORT OF THE SECRETARY-
TREASURER

Receipts

June 12, 1919, received from Dr. R. D. Alway, former treasurer	\$735.17
Aug. 22, 1919, per capita dues, Aberdeen District No. 1	15.00
Sept. 24, 1919, per capita dues, Sioux Falls District No. 7.....	15.00
Oct. 8, 1919, per capita dues, Mitchell District No. 6.....	18.00
Oct. 8, 1919, per capita dues, Rosebud District No. 10.....	3.00
Oct. 8, 1919, per capita dues, Sioux Falls District No. 7.....	3.00
Mar. 15, 1920, per capita dues, Pierre District No. 4	12.00
Mar. 22, 1920, per capita dues, Pierre District No. 4	6.00
Apr. 4, 1920, per capita dues, Rosebud District No. 10	33.00
Apr. 4, 1920, per capita dues, Sioux Falls District No. 7	105.00
Apr. 4, 1920, per capita dues, Pierre District No. 4	6.00
Apr. 17, 1920, per capita dues, Watertown District No. 2.....	75.00
Apr. 17, 1920, per capita dues, Huron District No. 5	75.00
Apr. 17, 1920, per capita dues, Mitchell District No. 6	84.00
Apr. 20, 1920, per capita dues, Black Hills District No. 9.....	84.00
Apr. 22, 1920, per capita dues, Watertown District No. 2.....	9.00
Apr. 23, 1920, per capita dues, Huron District No. 5	3.00
May 1, 1920, per capita dues, Madison District No. 3	54.00
May 5, 1920, per capital dues, Aberdeen District No. 1.....	3.00
May 5, 1920, per capita dues, Aberdeen District No. 1.....	33.00
May 5, 1920, per capita dues, Aberdeen District No. 1.....	255.00

May 5, 1920, per capita dues, Mitchell District No. 6	18.00
May 6, 1920, per capita dues, Yankton District No. 8.....	153.00
May 8, 1920, per capita dues, Black Hills District No. 9.....	6.00
May 8, 1920, per capita dues, Sioux Falls District No. 7.....	39.00
May 11, 1920, per capita dues, Huron District No. 5	3.00
May 11, 1920, per capita dues, Black Hills District No. 9.....	6 00
May 18, 1920, per capita dues, Mitchell District No. 6	12.00
May 18, 1920, per capita dues, Sioux Falls District No. 7.....	12.00
May 18, 1920, per capita dues, Aberdeen District No. 1.....	21.00
Total	\$1,896.17

Disbursements

July 11, 1919, warrant No. 1. William Whitford	\$162.11
July 11, 1919, warrant No. 2. Whitehead and Hoag Company	1.90
July 15, 1919, warrant No. 3. W. L. Klein, Journal-Lancet	180.00
Feb. 6, 1920, warrant No. 4. Journal-Lancet	199.50
Feb. 6, 1920, warrant No. 5. Will A. Beach Printing Company	9.13
Feb. 6, 1920, warrant No. 6. Sessions Printing Company	24.02
May 18, 1920, warrant No. 7. Dr. F. A. Spafford (office expenses).....	39.75
May 18, 1920, warrant No. 8. Dr. F. A. Spafford, salary Secy.-Treas.....	250.00
May 18, 1920, warrant No. 9. American Medical Association	6.50
May 18, 1920, warrant No. 10. Dr. J. F. D. Cook, expenses as delegate to A. M. A.	50.00
Total	\$922 91
Balance	\$973.26

The President appointed as a committee to audit the accounts of the Secretary-Treasurer, Drs. C. S. O'Toole, L. N. Grosvenor, and N. K. Hopkins.

After a recess of a few minutes during which time the Auditing Committee examined the books and warrants of the Secretary-Treasurer, the Councilors re-assembled and the Auditing Committee reported that they had carefully examined the above financial report of the Secretary-Treasurer and found it correct.

Signed C. S. O'TOOLE for the Committee.
Adjourned.

PROCEEDINGS OF THE BOARD OF COUNCILORS

SECOND SESSION, THURSDAY, MAY 20, 1920

The Board of Councilors met in the parlors of the Cataract Hotel at 11:00 A. M., Thursday, May 20, 1920, and was called to order by the President of the Association, Dr. R. D. Alway, of Aberdeen.

There were present Dr. J. F. D. Cook, of Langford, 1st District; Dr. E. O. Giere, of Watertown, 2nd District (elected vice Dr. O'Toole, resigned); Dr. N. K. Hopkins, of Arlington, 3rd District; Dr. L. N. Grosvenor, of Huron, 5th District; Dr. Frederick Treon, of Chamberlain, 6th District; Dr. F. E. Clough of Lead, 9th District.

The recommendation of the House of Delegates in regard to an advance of subscription to \$1.50 per member to THE JOURNAL-LANCET until January 1st, 1921, and an increase to \$2.00 thereafter under certain conditions was unanimously approved, and the Secretary was directed to so inform THE JOURNAL-LANCET.

No further business appearing, the Council adjourned *sine die*.

F. A. SPAFFORD, M. D.,
Secretary.

PROCEEDINGS OF THE GENERAL MEETINGS OF THE ASSOCIATION

FIRST SESSION, WEDNESDAY, MAY 19

The Association met in the ballroom of Hotel Cataract, and was called to order at 9:20 A. M. by the President, Dr. R. D. Alway, Aberdeen.

Dr. H. R. Hummer, of Canton, read a paper entitled "A Plea for the Early Recognition of Insanity," which was discussed by Drs. Adams, Eaton, Willhite, Ohlmacher, Adson, Koobs, and Davis, after which the discussion was closed by the essayist.

Miss Gertrude M. Rines, State Supervising Nurse, of Armour, read a paper (by invitation), entitled "The Public Health Nurse," which was discussed by Drs. Hollingsworth, Clark, Parsons, Spafford, Bracken, and, in closing, by the essayist.

Professor Edwin V. Mitchell, of Vermilion, read a paper on "The Doctor and the State," which was discussed by Dr. Spafford.

Dean Akeley, of Vermilion, spoke on "Standardization of Weights and Measures," which was discussed by Dr. Green.

On motion, the Association adjourned until 2 P. M.

SECOND SESSION, MAY 20

The Association reconvened at 2 P. M., and was called to order by the First Vice-President, Dr. H. T. Kenney, of Pierre.

At this juncture, President Alway delivered his address. He selected for his subject "The Relation of the Medical Profession to Health Conservation."

Professor H. A. Whittaker, State Board of Health, St. Paul, Minnesota, read a paper entitled "State Control of Water Supplies." The paper was discussed by Drs. Ohlmacher, Bracken, Herzberg, and, in closing, by the essayist.

The President announced the following Committee on Nominations: Dr. J. F. D. Cook, of Langford; Dr. H. M. Freeberg, of Watertown; Dr. R. S. Westaby, of Madison; Dr. E. B. Taylor, of Huron; Dr. E. W. Jones, of Mitchell; Dr. L. F. Beall, of Irene; Dr. F. E. Clough, of Lead; Dr. J. C. Waterman, of Burke, and Dr. H. T. Kenney, of Pierre.

Dr. A. W. Adson, of Rochester, Minnesota, read a paper (by invitation) entitled, "Surgery of Spinal Cord Tumors."

Dr. J. H. Stokes, Rochester, Minnesota, read a paper (by invitation) entitled, "The Diagnostic Problem of Syphilis from the Standpoint of Everyday Practice."

Dr. H. M. Bracken, St. Paul, Minnesota, read a paper (by invitation) on "The United States Public Health Service in Relation to Returned Soldiers."

On motion, the Association adjourned until 9 A. M., Thursday.

THIRD SESSION, MAY 20

The Association met at 9 A. M., and was called to order.

Dr. H. G. Harris, of Wilmot, read a paper entitled, "Intravenous Medication," which was discussed by Drs. Billion, Bobb, Craig, Eaton, Ohlmacher, and Giere, after which the discussion was closed by the essayist.

Dr. F. E. Clough, of Lead, gave a practical demonstration in the treatment of fractures of the femur with the Hodgen splint, which was discussed by Drs. Grove, Wright, Bobb, Eaton, and, in closing, by the essayist.

On motion, the Association adjourned until 2 P. M.

FOURTH SESSION, MAY 20

The Association reconvened at 2 p. m., and was called to order by the First Vice-President, Dr. Kenney.

Dr. J. C. Ohlmacher, of Vermilion, read a paper entitled, "The State Health Laboratory in Its Relation to the Physicians and Public Health," which was discussed by Dr. Hollingsworth and, in closing, by the essayist.

Dr. Park B. Jenkins, of the State Board of Health, Waubay, read a paper entitled, "Health Legislation." This paper was discussed by Drs. Kenny, Hollingsworth, Bobb, Koobs, Hill, Gifford, and, in closing, by the essayist.

Dr. H. Gifford, of Omaha, Nebraska, read a

paper (by invitation) entitled, "The Teeth in Congenital Syphilis," which was discussed by Dr. Stokes and, in closing, by the essayist.

Dr. N. J. Nessa, of Sioux Falls, read a paper, illustrated by slides, entitled "X-ray Diagnosis of the Pathological Thorax," which was discussed by Drs. Stokes, Bobb, and, in closing, by the essayist.

As there was no further business to come before the meeting, either scientific or otherwise, on motion, which was duly seconded and carried, the Association adjourned to meet in Aberdeen in 1921.

F. A. SPAFFORD, M. D.,
Secretary-Treasurer.

DISTRICT AND COUNTY ROSTER

ABERDEEN DISTRICT MEDICAL SOCIETY—NO. 1

PRESIDENT

Adams, J. F.Aberdeen

SECRETARY

Lavery, C. J.Aberdeen

Adams, B. A.Bristol
Adams, J. F.Aberdeen
Aldrich, H. H.Wessington
Alway, R. D.Aberdeen
Baer, T. H.Timber Lake
Bailey, F. C.Redfield
Baldwin, F. M.Redfield
Bates, W. A.Aberdeen
Brooks, C. N.Clark
Brosseau, J. E.Frankfort
Brown, A. E.Webster
Bruner, J. E.Frederick
Butler, C. A.Redfield
Carpenter, G. S.Bowdle
Carson, O. E.Hecla
Chapman, W. S.Redfield
Chase, A. E.Northville
Cliff, F. U.Milbank
Cook, J. F. D.Langford
Countryman, G. E.Aberdeen
Crain, F. M.Redfield
Creamer, Frank H.Dupree
Curtis, J. E.Lemmon
Davis, E. C.Eagle Butte
Deertz, J. J.Brentford
Devereaux, T. J.Aberdeen
Dinsmore, W. E.Claremont
Doupe, J. H.Wabay
Duncan, C. E.Roslyn
Dunn, J. E.Groton
Ebert, M. H.Webster
Edward, L. R.Ashton
Farrell, W. D.Aberdeen
Fiksdal, M. J.Webster

Flett, CharlesMilbank
Freyberg, F. W.Aberdeen
George, W. A.Selby
Gerdes, O. H.Eureka
Harris, H. G.Wilmot
Hart, B. M.Onida
Hart, R. S.Groton
Herman, H. J.Webster
Herman, J. D.Conde
Hill, Robert.Ipswich
Hoagland, C. C.Veblen
Holmes, A. E.Aberdeen
Holtz, Louis.Aberdeen
Homan, C. A.Aberdeen
Hurley, S. E.Gettysburg
Jackson, E. B.Aberdeen
Jacotel, J. A.Milbank
Jarvis, Abbie A.Faulkton
Jenkins, P. B.Waubay
Johnston, M. C.Aberdeen
Jones, R. R.Britton
Kaps, F. O.Britton
Kettner, J. C.Leola
King, H. I.Aberdeen
King, OwenAberdeen
Kleger, S. A.Mellette
Kramer, M. D.Roscoe
Kraushaar, F. J.Aberdeen
Kutnewsky, J. K.Redfield
Lamb, L. L.Faulkton
Lavery, C. J.Aberdeen
Longstreth, W. I.Sisseton
Lull, ShermanWaubay
Lundquist, C. C.Wetonka
Markin, B. F.Columbia
Mayer, R. G.Cresbard
McCauley, C. E.Aberdeen
Mertens, J. J.Gettysburg

Michael, L. F.Gettysburg
Miller, J. F.Andover
Miller, Frank.Aberdeen
Miller, V. M.Mellette
Morton, G. M.New Effington
Murdy, B. C.Aberdeen
Murdy, R. L.Aberdeen
Murphy, T. W.Pierpont
Olson, C. O.Groton
Peabody, H. C.Webster
Peabody, PercyWebster
Pearson, A. W.Peever
Potter, Geo. W.Redfield
Pugh, G. F.Florence
Quinn, J. F.Mobridge
Ramsey, E. T.Clark
Ranney, T. P.Aberdeen
Rathbun, J. P.Seneca
Rice, D. B.Aberdeen
Ricketts, F. B.Peever
Rosenthal, S.Java
Sargent, C. E.Isabel
Seeman, C. A.Tulare
Seeman, H. J.Rockham
Senescall, C. R.Veblen
Sornsen, A. A.Aberdeen
Strang, C. B.Lemmon
Sullivan, DennisMilbank
Sutton, Dewey.Redfield
Totten, F. C.Lemmon
Twining, G. H.Mobridge
Van Dalsem, Friede.Huron
Weishaar, C. H.Aberdeen
White, E. W.Ipswich
Whiteside, J. D.Aberdeen
Whitney, F. H.Firesteel
Whitney, L. D.Aberdeen
Wilson, R. D.Aberdeen

WATERTOWN DISTRICT MEDICAL SOCIETY—NO. 2

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Bartron, H. J. Watertown
Bates, J. S. Clear Lake
Burlingame, R. M. Watertown
Campbell, R. F. Watertown
Crawford, J. H. Watertown
Finnerud, H. M. Watertown
Fleiger, A. B. Willow Lake

Freeburg, H. M. Watertown
Frink, O. G. South Shore
Giere, E. O. Watertown
Gueffroy, H. A. Frankfort
Hammond, M. J. Watertown
Haraldson, O. O. Watertown
Haskill, A. I. Clark
Hendrikson, Paul Vienna
Hill, L. G. Sioux Falls
Johnson, A. Einar. Watertown
Koren, Finn Watertown
Lockwood, J. H. Henry

McIntyre, P. S. Bradley
Magee, W. G. Watertown
O'Toole, C. S. Watertown
Richards, G. H. Clear Lake
Rowe, A. N. Estelline
Sherwood, C. E. Watertown
Sherwood, H. W. Doland
Smith, S. W. Watertown
Staley, F. H. Vienna
Tarbell, H. A. Watertown
Vaughn, J. B. Castlewood
Williams, C. A. Doland

MADISON DISTRICT MEDICAL SOCIETY—NO. 3

PRESIDENT
Frudenberg, H. H. Madison
SECRETARY
Westaby, J. R. Madison
Allison, B. S. Madison
Baughman, D. S. Madison
Frudenberg, H. H. Madison
Green, B. T. Brookings

Grove, E. H. Arlington
Gueffroy, H. A. Frankfort
Gulbransen, G. H. Brookings
Hickman, G. L. Bryant
Hopkins, N. K. Arlington
Hovde, C. H. R. Madison
Jordan, L. E. Chester

Kellogg, H. E. Madison
Lee, James O. Pierre
Noble, H. B. Howard
Rogne, C. O. Oldham
Scanlan, D. L. Volga
Torwick, E. E. Volga
Westaby, J. R. Madison
Westaby, R. S. Madison

PIERRE DISTRICT MEDICAL SOCIETY—NO. 4

PRESIDENT
Martin, H. B. Harold
SECRETARY
McLaurin, A. A. Pierre

Hollister, C. M. Pierre
Kenney, H. T. Pierre
Langsdale, G. H. Highmore
Martin, H. B. Harrold

McLaurin, A. A. Pierre
Minard, R. W. Midland
Morrissey, R. J. Ft. Pierre
Riggs, T. F. Pierre

HURON DISTRICT MEDICAL SOCIETY—NO. 5

PRESIDENT
Thomas, Benjamin Huron
SECRETARY
Grosvenor, L. N. Huron
Amesberry, A. L. Carthage
Bostrom, A. E. De Smet
Burman, G. E. Carthage
Churchill, I. W. Wessington
Cogswell, M. E. Wolsey
Cowgill, C. H. Iroquois

Crafts, Earl Huron
Dyar, B. A. De Smet
Grosvenor, L. N. Huron
Jamieson, G. V. DeSmet
Launspach, G. W. Huron
Leach, W. O. Huron
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McKie, J. F. Wessington
McWhorter, Port. Miller
Saylor, H. L. Huron
Scheib, A. P. Hitchcock

Schwendener, J. E. Bryant
Sewell, H. D. Huron
Sheets, O. B. Carthage
Shirley, J. C. Huron
Shull, J. E. Alpena
Sprague, B. H. Huron
Taylor, E. B. Huron
Thomas, Benj. Huron
Tschetter, J. S. Huron
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Wright, O. R. Huron

MITCHELL DISTRICT MEDICAL SOCIETY—NO. 6

PRESIDENT
Kidd, F. S. Woonsocket
SECRETARY
Gillis, F. D. Mitchell
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Benkelman, W. H. Stickney
Bigler, Lottie Armour
Bobb, B. A. Mitchell
Bobb, C. S. Mitchell
Bobb, E. V. Mitchell
Bright, H. J. Mitchell
Buffaloe, A. J. Mitchell
Clauser, G. A. Bridgewater

Cochran, F. B. Plankinton
Delaney, W. A. Mitchell
Dunn, A. B. Chamberlain
Eaton, Richard Ethan
Gifford, A. J. Alexandria
Gillis, F. D. Mitchell
Hoyne, A. H. Salem
Hunt, W. M. Draper
Jenkenson, H. E.
Wessington Springs
Jones, E. W. Mitchell
Kammerling, T. S. Salem
Kelly, R. A. Mitchell
Kidd, F. S. Woonsocket

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Maytum, W. A. Alexandria
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McLellan, S. M. Kennebec
Mizner, Mark Parkston
Rogers, J. C. White Lake
Smiley, T. B. Mt. Vernon
Sprecher, Samuel Tripp
Stockdale, C. P. Woonsocket
Treon, Fred. Chamberlain
Wagar, E. W. Bijou Hills
Waldner, J. L. Parkston
Wilson, F. D. Armour
Young, E. M. Mitchell

SIOUX FALLS DISTRICT MEDICAL SOCIETY—NO. 7

PRESIDENT

Van Demark, G. E. Sioux Falls

SECRETARY

Keller, S. A. Sioux Falls

Billion, T. J. Sioux Falls

Bliss, P. D. Sioux Falls

Bower, C. F. Hartford

Brandon, P. E. Sioux Falls

Cottam, G. G. Sioux Falls

Craig, D. W. Sioux Falls

Culver, C. F. Sioux Falls

DeVall, F. C. Garretson

Donahoe, S. A. Sioux Falls

Eagan, J. B. Dell Rapids

Egan, M. H. Sioux Falls

Gage, A. E. Salem

Gage, E. E. Sioux Falls

Grove, A. F. Dell Rapids

Grove, M. M. Dell Rapids

Hannon, L. J. Hartford

Hanson, O. L. Valley Springs

Hollingsworth, I. P. P.

Sioux Falls

Houseman, W. McK. Sioux Falls

Hummer, H. R. Canton

Jones, T. E. Sioux Falls

Joyce, E. Hurley

Keller, S. A. Sioux Falls

Keller, W. F. Sioux Falls

Klaveness, E. Minneapolis, Minn.

Lewison, Eli Canton

Miller, E. C. Brookings

Moore, W. E. Sioux Falls

Nessa, N. J. Sioux Falls

Parke, L. L. Canton

Parsons, J. G. Sioux Falls

Perkins, E. L. Sioux Falls

Price, E. F. Alcester

Putnam, E. D. Sioux Falls

Putnam, F. I. Sioux Falls

Reagan, R. Garretson

Rider, A. S. Flandreau

Roberts, W. P. Sioux Falls

Rundlett, D. L. Sioux Falls

Schwartz, Joseph Sioux Falls

Sherwood, H. H. Humbolt

Smedley, Irene. Sioux Falls

Spafford, F. A. Flandreau

Stern, M. A. Sioux Falls

Stevens, R. G. Sioux Falls

Thompson, T. G. Sioux Falls

Trail, C. J. Sioux Falls

Tufts, A. H. Sioux Falls

Van Demark, G. E. Sioux Falls

Vaughan, L. B. Hurley

Zetlitz, K. A. L. Sioux Falls

Zimmerman, Goldie. Sioux Falls

YANKTON DISTRICT MEDICAL SOCIETY—NO. 8

PRESIDENT

Willhite, F. V. Yankton

SECRETARY

Beall, L. F. Irene

Adams, G. S. Yankton

Augspurger, E. D. Menno

Batterton, J. Y. Elk Point

Beall, L. F. Irene

Berry, S. G. Tyndall

Blezek, F. M. Tabor

Bouza, F. E. White River

Burkland, P. R. Vermilion

Bushnell, Wm. F. Elk Point

Crecelius, H. A. Volin

Cruikshank, Thos. Vermilion

Duguid, J. O. Springfield

Eagon, Alonzo Turton

Elliot, A. V. Beresford

Ellis, John Elk Point

Embree, V. W. Yankton

Frink, R. P. Wagner

Greenfield, J. C. Avon

Gross, C. C. Yankton

Hohf, J. A. Yankton

Hohf, S. M. Yankton

Isaac, J. P. Freeman

Kalayjian, D. S. Parker

Kauffman, E. J. Marion

Keeling, C. M. Springfield

Klima, Hermenegild Tyndall

Koobs, H. J. G. Scotland

Landmann, G. A. Scotland

Langley, C. S. Lake Andes

Moodie, W. C. Elk Point

Moore, D. V. Yankton

Moore, F. A. Lesterville

Morehouse, E. M. Yankton

Murphy, Jennie C. Yankton

Newby, H. D. Parker

Orvis, Harriet Yankton

Payne, R. H. Tripp

Pinard, P. H. A. Jefferson

Pinard, P. R. Wagner

Posthuma, Anne Centerville

Roane, James. Yankton

Sedlacek, F. A. Omaha, Neb

Smith, F. C. Yankton

Stansbury, E. M. Vermilion

Stewart, J. L. Spearfish

Stiffler, M. L. Yankton

Struble, A. J. Centerville

Swezey, F. A. Wakonda

Vangness, I. U. Beresford

Willhite, F. V. Yankton

Wipf, A. A. Freeman

BLACK HILLS DISTRICT MEDICAL SOCIETY—NO. 9

PRESIDENT

Hodges, V. S. Terry

SECRETARY

Richards, F. A. Whitewood

Allen, A. G. Deadwood

Chassell, J. L. Belle Fourche

Clough, F. E. Lead

Crane, H. L. Lead

Crouch, J. A. Bellefourche

Fasser, A. O. Bellefourche

Fleeger, R. B. Lead

Freeman, J. W. Lead

Hare, Carlyle. Spearfish

Hargens, C. W. Hot Springs

Heinman, A. A. Wasta

Hodges, V. S. Lead

Howe, F. S. Deadwood

Hultz, Eugene Hill City

Ince, H. J. T. Rapid City

Jackson, A. S. Lead

Jackson, R. J. Rapid City

Martin, J. H. Lead

Mattox, N. E. Lead

Miller, George. Spearfish

Minty, F. W. Rapid City

Mitchell, Fred. Newell

Moffitt, T. W. Deadwood

Owens, N. T. Rapid City

Pemberton, M. O. Deadwood

Ramsey, Guy. Philip

Richards, F. A. Sturgis

Schneerer, F. B. Deadwood

Walsh, J. M. Rapid City

Wilcox, H. H. Hot Springs

Yoskit, Harry. Hot Springs

Young, B. A. Hot Springs

ROSEBUD DISTRICT MEDICAL SOCIETY—NO. 10

PRESIDENT

Swett, Chas. H. Winner

SECRETARY

Bryant, F. A. Herrick

Bryant, F. A. Herrick

Cook, J. O. Fairfax

Kenaston, H. R. Bonesteel

Kimball, A. P. Winner

Malster, R. M. Carter

Murnan, H. A. Gregory

Overton, R. V. Dixon

Quinn, R. J. Burke

Quinn, W. M. Winner

Swett, C. H. Winner

Waterman, J. C. Burke

ALPHABETICAL ROSTER

Abbott, G. A. Watertown
 Adams, B. A. Bristol
 Adams, G. S. Yankton
 Adams, J. F. Aberdeen
 Aldrich, H. H. Wessington
 Allen, A. G. Deadwood
 Allison, B. S. Madison
 Alway, R. D. Aberdeen
 Amesberry, A. L. Carthage
 Augspurger, E. D. Menno
 Auld, C. V. Plankinton
 Baer, T. H. Timber Lake
 Bailey, F. C. Redfield
 Baldwin, F. M. Redfield
 Ball, W. R. Mitchell
 Bartron, H. J. Watertown
 Bates, J. S. Clear Lake
 Bates, W. A. Aberdeen
 Batterton, J. Y. Elk Point
 Baughman, D. S. Madison
 Beall, L. F. Irene
 Benkelman, W. H. Stickney
 Berry, S. G. Tyndall
 Bigler, Lottie Armour
 Billion, T. J. Sioux Falls
 Blezek, F. M. Tabor
 Bliss, P. D. Sioux Falls
 Bobb, B. A. Mitchell
 Bobb, Clyde S. Mitchell
 Bobb, E. V. Mitchell
 Bostrom, A. E. De Smet
 Bouza, F. E. White River
 Bower, C. F. Hartford
 Brandon, P. E. Sioux Falls
 Bright, H. J. Mitchell
 Brooks, C. N. Clark
 Brosseau, J. E. Frankfort
 Brown, A. E. Webster
 Bruner, J. E. Frederick
 Bryant, F. A. Herrick
 Buffalo, A. J. Mitchell
 Burkland, P. R. Vermilion
 Burlingame, R. M. Watertown
 Burman, G. E. Carthage
 Bushnell, Wm. F. Elk Point
 Butler, C. A. Redfield
 Campbell, R. F. Watertown
 Carpenter, G. S. Bowdle
 Carson, O. E. Hecla
 Chapman, W. S. Redfield
 Chase, A. E. Northville
 Chassell, J. L. Belle Fourche
 Churchill, I. W. Wessington
 Clauser, G. A. Bridgewater
 Cliff, F. U. Milbank
 Clough, F. E. Lead
 Cochran, F. B. Plankinton
 Cogswell, M. E. Wolsey
 Cook, J. F. D. Langford
 Cook, J. O. Fairfax
 Cottam, G. G. Sioux Falls
 Countryman, G. E. Aberdeen
 Cowgill, C. H. Iroquois
 Crafts, Earl Huron
 Craig, D. W. Sioux Falls
 Crain, F. M. Redfield
 Crane, H. L. Lead

Crawford, J. H. Watertown
 Creamer, F. H. Dupree
 Creelius, H. A. Volin
 Crouch, J. A. Bellefourche
 Cruikshank, Thos. Vermilion
 Culver, C. F. Sioux Falls
 Curtis, J. E. Lemmon
 Davis, E. C. Eagle Butte
 Deertz, J. J. Brentford
 Delaney, W. A. Mitchell
 DeVall, F. C. Garretson
 Devereaux, T. J. Aberdeen
 Dinsmore, W. E. Claremont
 Donahoe, S. A. Sioux Falls
 Doupe, J. H. Wabay
 Duguid, J. O. Springfield
 Duncan, C. E. Roslyn
 Dunn, A. B. Chamberlain
 Dunn, J. E. Groton
 Dyar, B. A. De Smet
 Eagan, J. B. Dell Rapids
 Eagon, Alonzo Turton
 Eaton, Richard Ethan
 Ebert, M. H. Webster
 Edward, L. R. Ashton
 Egan, M. H. Sioux Falls
 Elliott, A. V. Beresford
 Ellis, John Elk Point
 Embree, V. W. Yankton
 Farrell, W. D. Aberdeen
 Fasser, A. O. Bellefourche
 Fiksdal, M. J. Webster
 Finnerud, H. M. Watertown
 Fleeger, R. B. Lead
 Fleiger, A. B. Willow Lake
 Flett, Charles Milbank
 Freeburg, H. M. Watertown
 Freeman, J. W. Lead
 Freyberg, F. W. Aberdeen
 Frink, O. G. South Shore
 Frink, R. P. Wagner
 Frudenberg, H. H. Madison
 Gage, A. E. Salem
 Gage, E. E. Sioux Falls
 George, W. A. Selby
 Gerdes, O. H. Eureka
 Giere, E. O. Watertown
 Gifford, A. J. Alexandria
 Gillis, F. D. Mitchell
 Green, B. T. Brookings
 Greenfield, J. C. Avon
 Gross, C. C. Yankton
 Grosvenor, L. N. Huron
 Grove, A. F. Dell Rapids
 Grove, E. H. Arlington
 Grove, M. M. Dell Rapids
 Gueffroy, H. A. Frankfort
 Gulbransen, G. H. Brookings
 Hammond, M. J. Watertown
 Hannon, L. J. Hartford
 Hanson, O. L. Valley Springs
 Haraldson, O. O. Watertown
 Hare, Carlyle Spearfish
 Hargens, C. W. Hot Springs
 Harris, H. G. Wilmot
 Hart, B. M. Onida

Hart, R. S. Groton
 Haskill, A. I. Clark
 Heimman, A. A. Wasta
 Hendrikson, Paul Vienna
 Herman, H. J. Webster
 Herman, J. D. Conde
 Hickman, G. L. Bryant
 Hill, L. G. Sioux Falls
 Hill, Robert Ipswich
 Hoagland, C. C. Veblen
 Hodges, V. S. Lead
 Hohf, J. A. Yankton
 Hohf, S. M. Yankton
 Hollingsworth, I. P. P.
 Sioux Falls
 Hollister, C. M. Pierre
 Holmes, A. E. Verdon
 Holtz, Louis Aberdeen
 Homan, C. A. Aberdeen
 Hopkins, N. K. Arlington
 Houseman, W. McK. Sioux Falls
 Hovde, C. H. R. Madison
 Howe, F. S. Deadwood
 Hoyne, A. H. Salem
 Hultz, Eugene Hill City
 Hummer, H. R. Canton
 Hunt, W. M. Draper
 Hurley, S. E. Gettysburg
 Ince, H. J. T. Rapid City
 Isaac, J. P. Freeman
 Jackson, A. S. Lead
 Jackson, E. B. Aberdeen
 Jackson, R. J. Rapid City
 Jacotel, J. A. Milbank
 Jarvis, Abbie A. Faulkton
 Jenkins, P. B. Wabay
 Johnson, A. Einar Watertown
 Johnston, M. C. Aberdeen
 Jamieson, G. V. DeSmet
 Jenkenon, H. E.
 Wessington Springs
 Jones, E. W. Mitchell
 Jones, R. R. Britton
 Jones, T. E. Sioux Falls
 Jordan, L. E. Chester
 Joyce, E. Hurley
 Kalayjian, D. S. Parker
 Kammerling, T. S. Salem
 Kaps, F. O. Britton
 Kauffman, E. J. Marion
 Keeling, C. M. Springfield
 Keller, S. A. Sioux Falls
 Keller, W. F. Sioux Falls
 Kellogg, H. E. Madison
 Kelly, R. A. Mitchell
 Kenaston, H. R. Bonesteel
 Kenney, H. T. Pierre
 Kettner, J. C. Leola
 Kidd, F. S. Woonsocket
 Kimball, A. P. Winner
 Kimble, O. A. Murdo
 King, H. I. Aberdeen
 King, Owen Aberdeen
 Klaveness, E. Minneapolis, Minn.
 Kleger, S. A. Mellette
 Klima, Hermenegild Tyndall

Koobs, H. J. G.....Scotland
 Koren, FinnWatertown
 Kramer, M. D.....Roscoe
 Kraushaar, F. J.....Aberdeen
 Kutnewsky, J. K.....Redfield
 Lamb, L. L.....Faulkton
 Landmann, G. A.....Scotland
 Langley, C. S.....Lake Andes
 Langsdale, G. H.....Highmore
 Launspach, G. W.....Huron
 Lavery, C. J.....Aberdeen
 Leach, W. O.....Huron
 Lee, James O.....Pierre
 Lewison, Eli.....Canton
 Lockwood, J. H.....Henry
 Longstreth, W. I.....Sisseton
 Lull, Sherman.....Waubay
 Lundquist, C. C.....Wetonka
 McCauley, C. E.....Aberdeen
 McComb, T. T.....Letcher
 McGarvey, F. B.....Cavour
 McKie, J. F.....Wessington
 McIntyre, P. S.....Bradley
 McLaurin, A. A.....Pierre
 McLellan, S. M.....Kennebec
 McWhorter, Port.....Miller
 Magee, W. G.....Watertown
 Malster, R. M.....Carter
 Markin, B. F.....Columbia
 Martin, H. B.....Harrold
 Martin, J. H.....Lead
 Mattox, N. E.....Lead
 Mayer, R. G.....Cresbard
 Maytum, W. A.....Alexandria
 Mertens, J. J.....Gettysburg
 Michael, L. F.....Gettysburg
 Miller, E. C.....Brookings
 Miller, Frank.....Aberdeen
 Miller, George.....Spearfish
 Miller, J. F.....Andover
 Miller, V. M.....Mellette
 Minard, R. W.....Midland
 Minty, F. W.....Rapid City
 Mitchell, Fred.....Newell
 Mizner, Mark.....Parkston
 Moffitt, T. W.....Deadwood
 Moodie, W. C.....Elk Point
 Moore, D. V.....Yankton
 Moore, F. A.....Lesterville
 Moore, W. E.....Sioux Falls
 Morehouse, E. M.....Yankton
 Morrisey, R. J.....Ft. Pierre
 Morton, G. M.....New Effington
 Murdy, B. C.....Aberdeen
 Murdy, R. L.....Aberdeen
 Murnan, H. A.....Gregory
 Murphy, Jennie C.....Yankton
 Murphy, T. W.....Pierpont
 Nessa, N. J.....Sioux Falls
 Newby, H. D.....Parker
 Noble, H. B.....Howard

O'Toole, C. S.....Watertown
 Olson, C. O.....Groton
 Orvis, Harriet.....Yankton
 Overton, R. V.....Dixon
 Owens, N. T.....Rapid City
 Parke, L. L.....Canton
 Parsons, J. G.....Sioux Falls
 Payne, R. H.....Tripp
 Peabody, H. C.....Webster
 Peabody, Percy.....Webster
 Pearson, A. W.....Peever
 Pemberton, M. O.....Deadwood
 Perkins, E. L.....Sioux Falls
 Pinard, P. H. A.....Jefferson
 Pinard, P. R.....Wagner
 Potter, Geo. W.....Redfield
 Posthuma, Anne.....Centerville
 Price, E. F.....Alcester
 Pugh, G. F.....Florence
 Putnam, E. D.....Sioux Falls
 Putnam, F. I.....Sioux Falls
 Quinn, J. F.....Mobridge
 Quinn, R. J.....Burke
 Quinn, W. M.....Winner
 Ramsey, E. T.....Clark
 Ramsey, Guy.....Philip
 Ranney, T. P.....Aberdeen
 Rathbun, J. P.....Seneca
 Reagan, R.....Garretson
 Rice, D. B.....Aberdeen
 Richards, F. A.....Sturgis
 Richards, G. H.....Clear Lake
 Ricketts, F. B.....Peever
 Rider, A. S.....Flandreau
 Riggs, T. F.....Pierre
 Roane, James.....Yankton
 Roberts, W. P.....Sioux Falls
 Rogers, J. C.....White Lake
 Rogne, C. O.....Oldham
 Rosenthal, S.....Java
 Rowe, A. N.....Estelline
 Rundlett, D. L.....Sioux Falls
 Sargent, C. E.....Isabel
 Saylor, H. L.....Huron
 Scanlan, D. L.....Volga
 Scheib, A. P.....Hitchcock
 Schneerer, F. B.....Deadwood
 Schwartz, Jos.....Sioux Falls
 Schwendener, J. E.....Bryant
 Sedlacek, F. A.....Omaha, Neb
 Seeman, C. A.....Tulare
 Seeman, H. J.....Rockham
 Senescall, C. R.....Veblen
 Sewell, H. D.....Huron
 Sheets, O. B.....Carthage
 Sherwood, C. E.....Watertown
 Sherwood, H. H.....Humbolt
 Sherwood, H. W.....Doland
 Shirley, J. C.....Huron
 Shull, J. E.....Alpena

Smedley, Irene.....Sioux Falls
 Smiley, T. B.....Mt. Vernon
 Smith, F. C.....Yankton
 Smith, S. W.....Watertown
 Sornsen, A. A.....Aberdeen
 Spafford, F. A.....Flandreau
 Sprague, B. H.....Huron
 Sprecher, Samuel.....Tripp
 Staley, F. H.....Vienna
 Stansbury, E. M.....Vermilion
 Stern, M. A.....Sioux Falls
 Stevens, R. G.....Sioux Falls
 Stewart, J. L.....Spearfish
 Stiffer, M. L.....Yankton
 Stockdale, C. P.....Woonsocket
 Strang, C. B.....Lemmon
 Struble, A. J.....Centerville
 Sullivan, Dennis.....Milbank
 Sutton, Dewey.....Redfield
 Swett, C. H.....Winner
 Swezey, F. A.....Wakonda
 Tarbell, H. A.....Watertown
 Taylor, E. B.....Huron
 Thomas, Benj.....Huron
 Thompson, T. G.....Sioux Falls
 Torwick, E. E.....Volga
 Totten, F. C.....Lemmon
 Trail, C. J.....Sioux Falls
 Treon, Fred.....Chamberlain
 Tschetter, J. S.....Huron
 Tufts, A. H.....Sioux Falls
 Twining, G. H.....Mobridge
 Van Dalsem, Friede.....Huron
 Van Demark, G. E.....Sioux Falls
 Vangsness, I. U.....Beresford
 Vaughn, J. B.....Castlewood
 Vaughn, L. B.....Hurley
 Wagar, E. W.....Bijou Hills
 Waldner, J. L.....Parkston
 Walsh, J. M.....Rapid City
 Waterman, J. C.....Burke
 Weishaar, C. H.....Aberdeen
 Westaby, J. R.....Madison
 Westaby, R. S.....Madison
 White, E. W.....Ipswich
 Whiteside, J. D.....Aberdeen
 Whitney, F. H.....Firesteel
 Whitney, L. D.....Aberdeen
 Wilcox, H. H.....Hot Springs
 Willhite, F. V.....Yankton
 Williams, C. A.....Doland
 Wilson, F. D.....Armour
 Wilson, R. D.....Aberdeen
 Wipf, A. A.....Freeman
 Wood, T. J.....Huron
 Wright, O. R.....Huron
 Yoskit, Harry.....Hot Springs
 Young, B. A.....Hot Springs
 Young, E. M.....Mitchell
 Zetlitz, K. A. L.....Sioux Falls
 Zimmerman, Goldie...Sioux Falls

PRESIDENT'S ADDRESS: THE RELATION OF THE MEDICAL PROFESSION TO HEALTH CONSERVATION

BY R. D. ALWAY, M. D.

ABERDEEN, SOUTH DAKOTA

The new day is at hand when the welfare of the masses of the people is becoming more the concern of the whole people, and the Government of our country is already devoting its best thought and attention to the question of health—health-conservation and disease-prevention—to the end that we may have a strong, vigorous, robust, and healthy people. In a report to Congress on the state of public health with recommendations endorsed by President Wilson, wide extension of the United States Public Health Service is urged, an extension in which the Federal Government will assume close supervision of state and municipal health activities. The report, coming through the Department of the Treasury, to which the Public Health Service is attached, called attention to the deplorable situation revealed by the army draft. The completed army draft record shows that more than 34 per cent of all the draft registrants were rejected by examining boards on account of physical defects and diseases.

To meet the terrific drain on the man resources of the country, a war-time public-health program was formulated. Now, in the interests of the Nation, as well as of individuals, it is proposed to make this war-time program, with slight modifications, a permanent peace-time governmental policy.

Not only has the attention of our own country been concentrated on health, but the whole world is awakened to the realization that every effort must now be made to ameliorate the conditions responsible for ill health and disease, which are not due to poverty alone, but to neglect. The health of the people must be the special concern of the State. In other words, the world must be made safe to live in, not only from a military standpoint, but from the health point of view.

This worldwide prevalence of disease and suffering is in a considerable measure due to widespread ignorance and lack of application of well-established facts and methods capable either of largely restricting disease or preventing it altogether. It is clear that it is most important to the future progress and security of civilization that intelligent steps be taken to instruct the peoples of the world in the observance of the principles and practices which will contribute to

their health and welfare. In the accomplishment of these great aims it is of supreme importance that the results of science should be made available to the whole world; that high standards of practice and proficiency in the prevention of disease and the preservation of health should be promoted and supported by an intelligent and educated public opinion; and that effective measures should be taken in every country to secure the utmost co-operation between the people at large and well-directed agencies engaged in the promotion of health.

The Committee of Red Cross Societies proposes to utilize a central organization which shall stimulate and co-ordinate the voluntary efforts of the people of the world through their respective Red Cross societies, which shall assist in promoting the development of sound measures for public health and sanitation, the welfare of children and mothers, the education and training of nurses, the control of tuberculosis, venereal diseases, malaria, and other infectious and preventable diseases, and which shall endeavor to spread the light of human sympathy in every corner of the world, and shall invoke in behalf of humanity, not alone the results of science, but the daily efforts of men and women of every country, every religion, and every race.

The time is ripe for the subject of health-education, as the people were never in a more receptive state of mind on the question of public health than they are today.

The members of the medical profession as individuals are in position to make more friends among the people at large than the members of any other profession. They enjoy a respect generally accorded no other similar group of men. At some time or other almost every individual, either for himself or a member of his family, has reason to put all of his faith and hope for life in the medical or surgical skill of some physician. Contacts are made and friendships formed which leave an indelible impress.

The same feeling of dependency comes to the community at large in times of serious epidemic. Then the community looks to the profession to save it from preventable illness and needless loss of life. This was the situation of the world at large during the recent epidemic of influenza,

when the people stood aghast at the inroads of the disease.

The conditions of the past year have produced an open state of mind in the public, looking towards definite control of public health. Another point of progress has been the recognition on the part of financial and business interests of the economic value of good health. The task of meeting demands for war production on an unprecedented scale put the workers to an exhaustive test of their physical fitness. Absence from work on account of illness loomed large in the failures on the part of manufacturing interests to meet their promised deliveries of munitions.

Occupational diseases, fatigue, the effect of overtime, and bad housing received due recognition as factors in schemes of production. Scientific studies along these lines have been stimulated twenty-five years in advance of the ordinary course of industrial events, all of which has placed the financial and business world behind any sane constructive health program.

The question that is uppermost in forward-looking medical minds today is this: Will the profession make use of the advanced outpost that it now holds in the public eye and of its latent power for good, or will it ignore this most favorable opportunity of raising the standard of living of all the people through the better health conditions through centralized intensive health work? Will it be sufficiently socially minded to work as a unit for a broad national, state, county, and municipal health organization? In the present temper of the country, the passage of proper legislation can be had if the profession interests itself in its enactment.

It has long been clear that the most serious obstacle to the development of public-health work is the lack of trained local health officers, and that it is quite impossible to obtain such trained officials for small rural or semirural population groups. The obvious remedy for this condition is the creation of administrative sanitary units larger than the individual town or village, each large enough to employ a competent full-time health officer, with the staff necessary for efficient public-health work along modern lines, and an annual budget sufficient to maintain such unit.

For the first time in its history the United States Public Health Service, during the recent war, organized a division of public-health nursing, and considered the work of the public-health nurse one of the essentials to good health admin-

istration. There are certain branches of health work which public-health nurses are especially qualified by their experience and training to do, and to do better than physicians or sanitary inspectors; and it was this fact which led the Government to consider them as essential to modern health administration.

Public-health nursing, like all other branches of nursing, is not a work by itself, but a very necessary complement to the work of others. If physicians and health officials find the nurse's part of the health program essential, so, too, her success is quite dependent upon their recognition and support.

A successful public-health nurse reaches so many different groups of people that her opportunities for helpfulness are many. She comes in touch with woman's clubs and other private organizations, with boards of health, boards of education, with life insurance companies and social agencies, with city and county officials, with physicians, ministers, and teachers. But the best and most useful of the nurse's opportunities is her welcome in the home of the people. She gains this welcome through her services in time of sickness and through her interest in and care of the children of the family. This tangible service can be understood and interpreted in terms of friendliness, so that advice in ways of health is graciously taken.

The foundation of public-health protection is the education of the people in the ways of health. Some individuals can be reached by magazine articles and by newspaper talks and health leaflets, but thousands read little and think little. One logical beginning place for public-health education is in the school. A system which gathers in the rich and the poor, the bright and the dull, the healthy and the unhealthy, presents many complications, but the school is a well-established institution, through which, because of our compulsory-education laws, most of our citizens must pass. It holds the individual in the years when the mind is receptive and when his chief occupation is to acquire knowledge. The children, assembled as they are in school-room groups of graded ages and mentality, can be reached conveniently and instructed befittingly in matters of hygiene.

There is no better place to teach the prevention of communicable disease. It is often too late to change the established customs of an adult, especially when his education is absolutely completed and he knows everything. During school years

not only the child's mind, but also his body, is passing through a most important period of growth. Experience has shown that the most effective way of securing correction for the defects revealed by the physician's examination is for the nurse to visit the parents, explain the trouble, and help them get the remedy. To find a defect means little if the parents are not persuaded to have it corrected.

Dr. Livingston Farrand, chairman of the American Red Cross Central Committee, in speaking of its health program, said:

"The greatest contributing factor in disturbing the happiness of mankind reduces in the last instance to questions of physical well being—to problems of health and disease. Nations have been coming to a point where they realize that fact, and they are turning—the whole world is turning to organizations of every kind for help in the prevention of preventable disease. There has been no hesitation in reaching the conclusion that the great problem of the world is this problem of disease."

This is not mere talk; it is a fact. We are now seeing that these things which have been known for years by science—by medical science—are being realized by the people. And the question they are asking is, "What are we to do?" They are looking for help, they are looking for guidance, and they naturally look to the organizations that are built upon such a basis and have been guided in such a way as to beget confidence.

The right to life today has a very broad meaning. The Nation, State, and City are now engaged in a fight against the toll levied upon life due to the complex character of our modern civilization, to ignorance, and to preventable diseases. Pure food, sanitary and safety measures affecting the home, the school, and the factory, protective measures against the ravages of contagious disease, and many other public regulations have raised our standard of living, increased our productive power, and reduced our death-rate.

A vast amount of human material has been wasted in the past through neglect; and as much more has been wasted because we have just been satisfied to care for the wreckage without giving enough consideration to stopping the supply. As a result disease has been increasing with the growth of population, and, consequently, we have devitalizing conditions which beget disease and degeneracy.

The medical profession in this country pos-

sesses a vast amount of unused energy that might be directed towards educating the public to realize the importance of human conservation. We see the growth and undoing of men in a way that others do not, and we know that simple, wholesome living is productive of healthy and effective lives. We observe untrained and incompetent men and women struggling in a bad environment and becoming prematurely old. The incompetent lives of parents are repeated in children that are dwarfed in both body and mind.

A great work, greater than that done by any other agency, has been accomplished by the doctors in caring for these unfortunates, but that is not enough, for we have been dealing mainly with the results, the disease itself, and have done comparatively little in the way of prevention. To a certain extent this has been unavoidable, as only in the past decades has our knowledge of the hidden sources of many diseases and degeneracies allowed the formulation of plans for health conservation that would bring about such results as are possible today.

It is not enough to prevent contagious disease, or even prevent all diseases. A conservation plan should embody human reconstruction in its broadest sense, beginning with the child, and should not stop at manhood. Such a plan should be administered by the Government, and the business of the medical profession will be to secure such a plan. To educate the people and show them what human conservation really means will require the united efforts of physicians acting in every community. For the Government will be slow to put a constructive program in force unless the general public can be convinced of the necessity for it.

There is, fortunately, a growing interest in the medical profession in preventive measures, which is reflected in activities of various states and in that of the general government. The health work in cities, the community nursing, the follow-up work of dispensaries and hospitals, are among the activities educating the public for a comprehensive program that is bound to come. We need a comprehensive plan for the entire country, and, if the profession could induce congress to appoint a medical commission to investigate the need for a health program, such a body could easily furnish evidence of the necessity for it and get some action. We need a general plan of health conservation to remedy the conditions that cause much of the disease we find in public hospitals and much of the degeneracy we find

outside of them. A government plan could see to it that the states did their duty, and a good place to begin is in the public schools if we are to prevent the physical degeneracy which now confronts every community. Not only should children's health be guarded, but the training of their bodies is just as important as the training of their minds. The brain and the brawn of the nation depend on the health of its citizens, and the preparation for right living should be made largely during the growing period so that these children will be future citizens of whom we may be proud.

It is a true saying that nothing stands alone in this world, not even a medical association. Society created us as a profession because it needs us, and, therefore, we must always be serving its purpose. Every medical association and every society should do public educational work in the interest of a human conservation program. Medical men should not be willing to leave to others the credit or the task of leading this movement, which is essentially a social duty of physicians. The profession owes it to society and to itself as a scientific and progressive body to demand that the health and physical vigor of the men and women of the nation be raised to the highest standard, and cared for by the nation. The best interests of society are conserved by education, and the people must be met on a ground of equality to gain their confidence.

Industrial or national peace, meaning the success, health, unity, and contentment of the people of the nation, is something that vitally concerns us just now. Not only is it an individual problem, but it is directly and universally personal. Not one of us can escape the responsibility of finding answer to the question that bears on the success, health, and peace that shall come to each individual, for all of these make up our national life, and each one of us is individually responsible for the answer. Dr. Otto P. Geier, in a recent article in *Modern Science*, has said, "How this may be brought about, how these individuals may be drawn nearer to an established order of peace and harmony, how they may be influenced toward maximum production for their own and community welfare, how they may be brought to their best citizenship, actively in support of their government, and, finally, how that government may come to be but the composite expression of the best desires and ambitions of men, is the special challenge that comes to the medical profession." I ask you if he is not right.

President Wilson did not include a member of our profession in his national industrial conference at Washington last October. Other professions, the farmer, organized portions of society, and particularly organized labor, were represented so that their interests were well taken care of at this conference. Working conditions, prevention of occupational diseases and accidents, medical supervision with physical examination, and every-day living conditions which involve housing and community health are questions for this national industrial conference on which the physician with his scientific training and social viewpoint might have been interrogated and have given valuable suggestions. Still, on all these things that make for the success, health, unity, and contentment of the people, and are vital to our well being and national peace, the medical, of all professions, was absolutely left out.

Whether we were entitled to consideration and recognition in this connection is a question for us to ask ourselves. All men and associations of any moral or mental status or leadership, must bend their best energies to the solution of the problem arising out of this industrial and social crisis. Selfish interest must be laid aside, and the physician who has the closest view of the intimate living and thinking of people, must make his contribution to the solving of these problems vital to health and sanity, which are basic factors in every social consideration. We can no longer afford to stand aside, take a passive interest, and fail to make ourselves felt in the social and economic changes that are going on about us. We must not narrow our vision to the capacity the profession has to assist in these national and community problems. Yet legislation has been enacted having to do with disease and accident in which the medical profession has been totally ignored.

Workmen's compensation acts have been established for the care of injured workers, and it was labor that succeeded in securing this legislation allowing compensation for time lost on account of accidents, and, in addition, the payment of the surgeon's fee. Labor was left to its own knowledge as to how to obtain the best medical and surgical results for its unfortunate workmen. Compulsory sickness insurance is being advocated, and it behooves the profession to see to it that there are not pernicious enactments. Justice must be done to all, the employer, the employee, and the attending surgeon, included.

We must render our best services and prove indispensable if society is to progress. Our usefulness in the discussion of these problems must be shown, and we must fit ourselves accordingly if we are to demonstrate our worth to society.

Under any workman's compensation act or social insurance scheme the physicians are an essential part of the machinery, and as members of the medical profession we must recognize the deep concern that must necessarily be felt by the physicians as to their future. Until recently about the only object of organization in the medical profession has been to spread medical knowledge so that the people at large could best receive the benefits of discoveries and advancements made in our science.

Our organization has concerned itself very little with the financial side of the practice of medicine, but a discussion of the financial aspects of our professional work is not inconsistent with the high ideals which we must maintain. The service rendered by the medical profession must be on a business, and not on a charity, basis. The public has long considered it part of the physician's duty to give his time and knowledge to charity. This has been willingly and gladly given; but because it has been so willingly given is no justification for asking that physicians under health insurance laws or workman's compensation acts shall not be justly and adequately remunerated for an adequate service. Physicians must earn their livelihood in carrying out the provisions of the law, and they are justified in demanding that the standards of this livelihood shall not be lowered from the standards they already possess. The experience of physicians in some states, particularly in Massachusetts and New York, under workman's compensation laws, has made them realize that their interests were not safeguarded. These laws were passed before physicians realized the responsibilities that would come to them or what their duties would be under the law.

Organization is being used to promote the material welfare of the members of various groups and associations of men. "In union there is strength" is the slogan that has guided these various organizations of trades, businesses, or movements to success. Just remember that only a few years ago a union composed of only a comparatively small number of men went to Washington and gave the president of the United States a limited period of time to see that their demands were complied with, under a threat of

a complete and disastrous paralyzation of the transportation systems of the country, and that the president and congress bowed to their masters and did their bidding.

Different companies or individuals engaged in the same line of business have found that they must organize as a unit for the benefit of their particular type of business. As individuals they may be competitors, but they find that an organization which embraces them all is an essential to their success.

There are approximately 700 physicians in the State of South Dakota, and yet only about 50 per cent of them are members of the South Dakota State Medical Association. The annual dues are now but \$5, and there should be a 100 per cent membership of those in active practice, if the interests of the profession are to be properly safeguarded. To see that we as a profession and as individuals are properly cared for, a compact, aggressive, and efficient organization is needed, for, in working for our own interests in this matter, we are also benefiting the public. Movements connected with education, religion, philanthropy, and so on, have found that in organization is their great success. Experience has taught that the Community Chest will raise more funds with less effort than the separate appeal of a hundred of its constituent units, that the National Red Cross can easily do what its individual chapters could not even attempt, that even the churches can promote their propaganda far more effectively if combined into a federation of churches.

All of these organizations use publicity to promote their objects. They are all working for their own class interests, and they take their own interests very seriously. They believe that a thing that is worth doing at all is worth doing well. Therefore, they do not entrust their vital interests to well-intentioned, philanthropic members who may be willing to donate such part of their time as their feeling of responsibility dictates, but they employ trained and competent men for their needs, and having paid them well, demand results, and get results. This, of course, requires money, and plenty of it, and they assess themselves accordingly. It is self-evident that it pays; otherwise they would not be doing it.

Suppose the annual dues of the South Dakota State Medical Association were increased to \$20, and there was a 100 per cent membership, there would be an annual working capital of at least \$14,000. This would make it possible to have

an executive secretary, an efficient, well-paid, full-time employe to attend to its interests. The Association could then cause itself to be heard, and make its influence felt to the benefit of the public and of itself.

The profession, as an organized body, has been totally ignored in public affairs about matters pertaining to medicine, and, through loose and inefficient organization, we have simply been treated as though we did not exist. We have no influence politically because it is recognized that we do not have an organization sufficiently active to make us a unit. We are safely ignored because we are a mob, and not an army. Could we be united on what we want, and have the influence to make our wants known and to show that we were a unit in these wants, we could have as much power in public affairs as any other actively administered organization.

Only the great medical profession, widely as it touches public life, has been blind to the desirability of such influential participation in community life, and has failed to appreciate that the trend of the times in all other professions, businesses, and trades is towards a policy of publicity, assertiveness and aggressiveness in pushing the profession, if not the individual members of it, into the life of the community.

Unless the medical profession unites in a common cause for its own protection, it may find itself working for the state and receiving only such fees as capital, labor, and the politicians have fixed by legislative enactment. Such a pauperization of the profession can be prevented by the concerted and united action of its individual members. If the profession as a group, a class, a unit in civic life, is to obtain the influence and enjoy the prestige in the community to which its membership entitles it, it must adopt more modern methods. It is for the medical profession at large to determine what place it will hold.

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THE ALCOHOL PROPOSITION

Shortly after the prohibition law went into effect the Government gave licensed physicians the right to prescribe a certain amount of liquor. For this purpose blanks were gotten up, a duplicate to be filled out and retained by the physician and the blank itself to go to the druggist. On this blank were various items, that is, information as to whom the liquor was for, the date of the prescription, the amount of liquor called for, and, what was more astounding, the ailment of the patient. The result has been just what might have been anticipated, that is, some physicians have made a good living by prescribing alcohol. They have also taken advantage of the appetite of the "thirsty" man, and charged him a large fee for the prescription; in many instances the amount of liquor prescribed cost less than the physician charged for the prescription. The most common disease or disorder for which the prescriptions were written was "general debility." From that they have gone on to "nervous breakdown," "influenza," "neuralgia," "insomnia," "bronchitis," and "diabetes." Of course, this sort of thing is a farce, and not infrequently men who were more or less intoxicated have been seen going into a doctor's office for a new prescription.

In some cities the results were appalling in that some physicians, only a few, would write from one hundred to two hundred prescriptions a day. This is almost as bad as the doctor on

the Canadian border who gave up his practice in order to write prescriptions for whiskey which was to be delivered on the United States side, simply a question of a few feet.

The problem now is how to correct this error. But as long as there is liquor to be had, or to be made, the man who wants it is going to get it, whether he pays for it or steals it. The men who wrote numerous prescriptions for imaginary diseases have been run down by the Government already, and their licenses have been taken away from them, consequently it's a little more difficult for the patient to secure a physician's prescription. Then, too, druggists are hesitating about handling liquor, first, because their stores may be invaded by burglars, and, secondly, because it is very easy for an employee to take a little extra on the side. The fact of the matter is, that the good drug stores of the country are not willing to handle liquor, and some other means must be adopted whereby the prescribing of alcohol may be strictly limited within normal and legal bounds.

It has been demonstrated again and again by theorists, practitioners, and research men that alcohol is commonly not needed, and that there are other tonics that will take its place and that are much safer. The fact remains that many men are responsible for their own ills, and they will follow out a line of feeble argument devised by themselves until it becomes, to them, a fact. This sort of thing has been going on for years, probably centuries, partly through ignorance and largely from indifference. It sometimes begins in infancy, when the child is made sick and weak because he has not enough air, because his teeth are overlooked, or because he is fed improperly. Perhaps he has been given narcotics, or furnished with bad seats in school and given impure drinking water. All of these things are about as bad as the prescribing of liquor, and they should be corrected along with the other, making improvements and advances from time to time.

If people are becoming indifferent to their own health, to their surroundings, and to the influences which are beating about them constantly, who is going to take the lead? Fundamentally, what we need is a revolution in our social system, and this is best illustrated by what is being done by the men and women who are interested in infant welfare work. They are beginning at the foundation, that is, with the child, and even before the child is born, to provide safe and sane methods for bringing up children and the making

of sane and safe adults. Everyone who contributes in any way to the betterment of the growing child and to the public welfare from a health point of view is doing more than the average politician ever thought of doing.

This craze for alcohol will not die out at once. There are too many people who think they know what is good for them, and there are a great many people who believe in doing just as they please.

THE SOUTHERN MINNESOTA MEDICAL ASSOCIATION

The midsummer meeting of the Southern Minnesota Medical Association took place at Fairmont on June 28 and 29. The opening meeting began in the afternoon at half past two and continued up to six o'clock, following which the women of Fairmont provided a banquet for the members and their wives, together with some of Fairmont's legal and social lights. The dinner was well served, and it was afterward reported that the women had grown accustomed to this character of service because they had done so much for the soldiers during the period of enlistment and after their return.

Following the banquet there were a few speeches and an entertainment which lasted until about nine o'clock. After these preliminaries, the regular evening session began with a paper by Dr. C. P. Howard, of Iowa City, Iowa, followed by one by Dr. Harry P. Ritchie, of St. Paul, and the session ended, as is usual at these meetings, between eleven and twelve o'clock. The following day the morning session began on time and was concluded at one o'clock.

Some of the papers were not read, as some of the men were unable to appear, due to the fact that the heavy rains had made traveling by automobile difficult, or unsatisfactory to say the least, which contributed to the unwillingness on the part of some of the men to undertake the trip from the Twin Cities to Fairmont. Those of us who went down by train on Monday morning at nine o'clock, reached Fairmont at six fifteen in the evening. Unfortunately this town, although most beautifully situated in one of the garden spots of the Northwest, is very inaccessible by train. The daring spirits who went down by automobile got through without much difficulty, however, and returned in the same convenient vehicle. One or two brave men went down by airplane. Dr. Valentine of Tracy, one of the men traveling by airplane, arrived in good

season. The other, a physician from Minneapolis, who left here at one o'clock in the afternoon, arrived in Kasota at two thirty, stopping there to replenish his gasoline; and while making this stop a heavy rainstorm came up which lasted for five hours, making it impossible for the airplane to proceed. The following morning, however, the driver and his passenger started off with the usual speed, and they landed in Fairmont just as the meeting adjourned. We noticed that this man returned by automobile and train, while the airplane stayed at Fairmont for exhibition purposes. This is probably an ideal way to travel, provided it doesn't rain hard and provided, also, that it is not absolutely necessary to be at the meeting-place promptly. If this is to be the fate of specialists and physicians who are going out into the country to make calls, the sick man should, in the meantime, call another doctor simply to show his confidence in the airplane service, because the airplane may not arrive just as he expects it. This, of course, is all a little bit of "moonshine," and the probabilities are that within a few years most of the men here and in other cities will own these machines and will fly from place to place and back to their homes again without disaster. Who would have thought, ten years ago, that such a thing was possible? And yet now, with the improved airplane service, it is highly probable that it will some day become a very useful means of making visits.

THE JOURNAL-LANCET wishes to call to the attention of the readers the enormous amount of work which is thrown upon the various committees who prepare for these meetings, for both midsummer and midwinter sessions. Very few of us realize that there is much to do, and yet if the chairmen of these various committees were not so diffident and modest they could tell of a period of work that had covered, not only weeks, but months. First comes the program committee, composed of Dr. A. F. Schmidt, of Mankato; Dr. H. W. Meyering, of Rochester; and Dr. E. M. Hammes, of St. Paul. It seems quite a simple matter to put three men of this type together and tell them to make up a program, but when one considers that these men have to meet, at various places, from two to four or five times a year, it means a sacrifice of time and a great deal of hard labor. The committee of arrangements in Fairmont had as chairman Dr. W. J. Richardson. Associated with Dr. Richardson were Dr. H. P. Johnson and Dr. George W. Dewey. These men were responsible for the

success of the meeting, and Dr. Richardson, as chairman, deserves great credit for his tireless energy. He was everywhere, looking after everyone and seeing to it that the machinery created was properly oiled.

The meeting-place, the high school building in Fairmont, was an ideal one. The banquet and the luncheon given by the citizens of Fairmont were served in the gymnasium, and the auditorium proved an excellent place for the reading of papers and discussions.

Dr. G. H. Luedtke, as Chairman of the reception committee, and his associates from Fairmont and adjoining towns were very active in looking after the comfort of the guests, while the executive committee, of which Dr. W. F. Braasch, of Rochester, was chairman, did everything necessary to promote the business and medical side of the meeting.

It is no discredit to Fairmont to say that it was actually wet, that is, during the meeting. It was wet, partly, because it rained, and the rest of the "wet" was due to the chain of lakes surrounding Fairmont, which add to its beauty and to its popularity as a summer resort.

The next meeting of this Association will be held in Mankato, and it promises to be the greatest in the existence of the Association.

NEWS ITEMS

Dr. J. N. Ewbank, of Rhame, N. D., will soon move to Marmarth, N. D.

Dr. James Semple has moved from Minot, N. D., to Lampman, Canada.

Dr. E. W. Gaag, of Wheaton, died last month of ptomaine poisoning at the age of 38.

Dr. T. C. Patterson, of Lisbon, N. D., is in New York City doing post-graduate work.

Dr. Erling W. Hansen, of Minneapolis, was married last month to Miss Elsie Gaustad, also of Minneapolis.

Dr. G. L. Gosslee, of Moorhead, has been appointed physician for the Northern Pacific Railway at that point.

Dr. W. E. Donahoe, of Sioux Falls, S. D., has been in Minneapolis doing special work in children's diseases.

There are now about two hundred students doing graduate work in the Mayo Clinic under the Mayo Foundation.

Dr. H. C. Ericksen, who enlisted in the army from Stanley, Wis., and saw much active service, has located at Northfield.

Dr. Frederick W. Fergusson, of Starkweather, N. D., was married last month to Miss Laura Jane Johnston, of Chicago, Ill.

Dr. O. W. Phelps, of Lemmon, S. D., died last month at the age of 73. Dr. Phelps had practiced medicine over forty years.

Dr. W. C. McMurtry, of Wolford, N. D., has become associated with the firm of Drs. Paterson, Wand & Bakke, of Lisbon, N. D.

Dr. George L. Gates, a pioneer physician of Winona, died last month at the age of 82. He had practiced in Winona for forty years.

Dr. F. H. Dubbe, a former resident physician of the Minneapolis General Hospital, has become associated with Dr. O. C. Strickler, of New Ulm.

Dr. E. G. Steele, of Plentywood, Mont., is taking an extended course of postgraduate work in New York City on the eye, ear, nose, and throat.

Dr. H. J. G. Koobs has moved from Scotland, S. D., to Mitchell, S. D., and has taken over the practice of the late Dr. C. A. Bower, of that city.

Dr. R. J. Hodapp, a recent graduate of the Medical School of the University of Minnesota, has gone into partnership with Dr. W. J. McCarthy, of Madelia.

Dr. Henry G. Blanchard, of Waseca, has retired from practice. Dr. Blanchard graduated from the University of Minnesota Medical School with the class of '97.

Dr. Glenn R. Matchen, of Minneapolis, is attending the State Fair of North Dakota as judge in the Babies' Health contest in charge of Dr. J. G. Dillon, of Fargo.

Dr. D. C. Darrow, son of the late Dr. E. M. Darrow, of Fargo, N. D., graduated from Johns Hopkins last month. He will spend his interne year at Johns Hopkins.

The Knights of Columbus, of Watertown, S. D., gave Dr. C. S. O'Toole, of that city, a banquet last month on his departure for California, where he will make his home.

The Minnesota State Medical Association will hold its annual meeting in St. Paul on September 29, 30, and October 1. The program committee promises the best program the Association ever had. It will appear in our columns as soon as it is prepared.

The new clinic building at Sioux Falls, S. D., which has cost nearly \$200,000, is ready for occupancy, and physicians are moving into it. The building is three stories high, and is a handsome structure, creditable alike to the city and the medical profession.

Dr. H. H. Frudenberg, who has practiced in Madison, S. D., for nearly twenty years, has sold his practice to Dr. C. C. Hoagland, of New York. Dr. Frudenberg will now move to Minneapolis, where his practice will be confined to eye, ear, nose, and throat work.

Dr. R. E. Morris, of the University Medical School of Minnesota, has become associated with Dr. Charles Lyman Greene, of St. Paul, where he will specialize in heart work. *THE JOURNAL-LANCET* has recently published papers by Dr. Morris covering some aspects of his original research work.

Dr. W. A. Bessessen, who has been practicing in Alberta Lea for fourteen years, has moved to Minneapolis. Dr. Bessessen is a graduate of the Northwestern University Medical School, class of '05. Mrs. Bessessen is well known in musical circles in Minneapolis, where she formerly lived, and sang herself, as Beatrice Giertsen, into fame.

The Wabasha County Medical Society held its fifty-second annual meeting at Zumbro Falls on July 8, when papers were read by Dr. J. H. Slocumb of Plainview, on "Tetany, with Case-Reports"; by Dr. H. E. Bowers, of Lake City, on "The Menopause"; and by Dr. V. C. Hunt, of the Mayo Clinic Staff, on "The Acute Abdomen."

The midsummer meeting of the Southern Minnesota Medical Association, held at Fairmont last month, was an eminent success. The editor of *THE JOURNAL-LANCET* made the response to the speech of welcome, and his friends say he did handsomely. He writes of the meeting on another page, but say nothing about his admirable speech.

Dr. C. H. Mayo, of Rochester, now in London, acted as a pall-bearer at the funeral services of Surgeon-General Gorgas. Dr. Mayo has been the recipient of many honors from distinguished men in London. He believes London will soon be a leading medical center of Europe, and will be especially attractive to American physicians studying abroad.

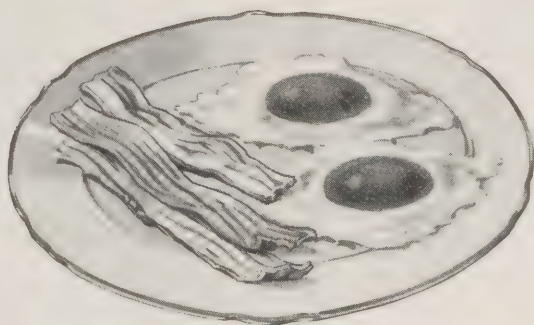
The Medical Association of Montana is now holding its annual meeting (July 14 and 15) at Helena, and it is dedicating today a new

Board of Health building, which is to be used exclusively for health purposes. This, we believe, gives Montana the distinction of being the only state in the Union to have a building for the exclusive use of health work.

The following committee has been appointed by Dr. Harry T. Kenney, president of the South Dakota State Medical Association, to co-operate with the South Dakota Educational Association on all matters pertaining to public health, sanitation, etc.: Dr. Park B. Jenkins, of Waubay, Superintendent State Board of Health; Dr. E. Einar Johnson, of Watertown, ophthalmologist; Dr. Goldie Zimmerman, of Sioux Falls, pediatrician; Dr. Cyrus Wendt, of Canton, and Dr. R. J. Jackson, of Rapid City, general practitioners.

The Graduate School of the University of Minnesota will offer a nine months' preliminary course of graduate work in ophthalmology and otolaryngology. The course will consist chiefly of advanced work in the science departments, giving fundamental training essential to this specialty, and will include special anatomy, embryology, and histology of the sense organs and of the head region; physiologic optics; physiology of the special senses and of speech; pathology of the eye, ear, nose, and throat; and bacteriology as applied to these organs. A systematic course of instruction, consisting of lectures, demonstrations, and quizzes on assigned topics, will be given and will cover the field of ophthalmology and otolaryngology. Clinical work in the outpatient department, consisting of the taking of case-histories and the examination and treatment of clinical cases, will be required. The course is not intended to prepare students to enter private practice, but is designed to serve as a basis for further thorough clinical training, such training to be obtained by service as resident in a special hospital, or by acting as assistant in a clinic of recognized standing, or by service in a fellowship under the University of Minnesota Graduate School plan. The course will begin September 29, 1920, and will be limited to ten students, who must be graduates of Class A Medical Schools, and have completed one year of internship in an approved general hospital. Information will be sent on request addressed to the Dean of the Graduate School, University of Minnesota.

("For Sale" and "Want Items" will be found on page 408.)



Costs 15 Times A Dish of Quaker Oats

Quaker Oats costs one cent per large dish. The dish above costs some 15 cents. A single egg costs several times the oat dish.

Quaker Oats yield 1810 calories per pound. Eggs yield 635, and round steak 890.

Quaker Oats forms almost a complete food. It is almost the ideal food.

Yet a Quaker Oats breakfast costs about one-tenth what many foods cost for the same calory value.

Note the comparison with other necessary foods based on prices at this writing:

Cost per 1,000 calories

Quaker Oats	-	-	-	5½c
Average Meats	-	-	-	45c
Hen's Eggs	-	-	-	60c
Young Chicken	-	-	-	\$1.66

Quaker Oats

Flaked from queen grains only—just the rich, plump, flavory oats. We get but ten pounds from a bushel, but they are flavory pounds.

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MERCURIAL (GREY) OIL - \$1.50

One of the New and Nonofficial Remedies. A valuable adjunct in the treatment of syphilis. Put up in syringes, each syringe containing ten doses. Credit of 50c upon return of syringe. Pamphlet sent upon request.

WASSERMANN TEST (Blood or Spinal Fluid) - - - - \$5.00

We do the classical Wassermann test. Specimens sent in by 10 a. m. reported the same day. We have run over forty thousand Wassermans in our laboratories. Reliability and accuracy depend on personal equation and method of operator. We run each Wassermann in triplicate, thus avoiding an error should we depend on one run only. Sterile containers, with needle, gratis upon request.

PASTEUR'S ANTI-RABIC VIRUS

Full Course Treatment - - \$25.00

As improved and made by DR. D. L. HARRIS, St. Louis, Mo. U. S. Government License 66. The treatment is so stable that it can be shipped anywhere and kept any reasonable length of time without loss of immunizing value. Immunity is established earlier and last longer with the Harris method than by the old Pasteur method. By this method a virus of constant and known potency is used and dosage can be accurately determined.

Telegraph orders given prompt attention.

EXAMINATION OF PATHOLOGICAL TISSUE - - - - \$5.00

Accurate histological descriptions and diagnoses of tissues removed at operation should be part of the clinical record of all patients.

AUTOGENOUS VACCINES - \$5.00

We culture all specimen aerobically and anaerobically and isolate the offending organisms. Pipettes for collecting material for autogenous vaccines sent upon request.

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The Preferred

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Meal with
Barium Sulphate

Write for
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Samples prepaid upon request

HORLICK'S MALTED MILK CO.

RACINE, WIS.

PUBLISHER'S DEPARTMENT

THE TRIODIDES (HENRY)

Henry's Liquor-Sali-Iodides is recommended by its manufacturers for the well-known train of diseases of a syphilitic or impure blood origin, such as diseases of the bones, rheumatism, eczema, etc.

The Henry Pharmacal Co., of St. Louis, will send any physician a \$1.50 bottle who will remit 30c to prepay the express charges.

"THE STANDARD SALINE LAXATIVE"

Sal Hepatica is said to be the largest seller of all pharmaceuticals, and this may be accounted for and indeed can be explained only by the fact that it is a perfectly efficient and harmless preparation, and its continued use in constipation produces no bad effects.

It is an old and reliable remedy, and is extensively prescribed by physicians.

PLUTO WATER

Pluto Water, like Pear's Soap, is a cleanser, though doing its work internally; and its reputation, like the reputation of Pear's Soap, is due to its efficiency and its pleasant ways.

Pluto Water is a well-nigh universally used laxative and cathartic, and is far pleasanter and, we may say, safer to use than most of the products of the laboratory.

DRUG ADDICTS

The habit cases seem to be on the increase, and the strain from our recent influenza epidemics upon physicians has made many addicts in their ranks. All such cases should be sent to specialists, and no one of this class is better known than Dr. W. K. McLaughlin, of the Hygeia Hospital of Chicago (State-Lake Building).

Dr. McLaughlin is no quack, but is a highly honorable physician of unquestioned professional standing, and cases sent to him are assured of the best known treatment and a large percentage of cures.

ANTIPHLOGISTINE

Antiphlogistine is sold and used in every civilized country in the world, and its use has been consistently on the increase since it was put upon the market about a third of a century ago, and not a few physicians have used it continuously during that time.

The merits of this product are found in its basic ingredients, and practically, to a large extent, in the manner of its compounding.

It is an anodyne, antiseptic, and antiphlogistic, and its use is purely scientific when prescribed where indicated by the above-named qualities.

THE POTTENGER SANATORIUM

It would be a hazardous thing to attempt to say where tuberculosis is most successfully treated, but it is perfectly safe to say that the Pottenger Sanatorium, at Monrovia, California, combines the elements of suc-

cessful treatment as do few other institutions in America or Europe. Some of these elements may be safely named, and are as follows: Climate, immediate surroundings, buildings and grounds, laboratory equipment, personnel of the unprofessional staff, and, above all, the personnel of the professional staff.

Judged by these standards the Pottenger Sanatorium unquestionably ranks A+, and is a credit to the medical profession of America.

MELLIN'S FOOD

Mellin's Food is not a beverage, but a pure food—a food for the infant deprived of mother's milk or the young child with low assimilative power, and a food for the invalid, especially the one whose stomach rejects the ordinary articles considered suitable for the sick.

Mellin's Food is in special favor with scientific physicians, for the manufacturers have kept pace with the work of stomach specialists the world over, and have not attempted to outwit the medical profession by putting over on them something that is unscientific. The Mellin Food Company has always maintained the confidence of all medical men.

THE NATIONAL PATHOLOGICAL LABORATORIES

The announcements of the National Pathological Laboratories made in our columns from time to time show the kind of work these laboratories are doing and the cost of the same, thus making their notices informing and well worth reading.

With laboratories in Chicago, Brooklyn, Detroit, St. Louis and New York it is evident that their organization is a thorough one and that they are serving the best doctors in America. We invite the special attention of our readers to them, and suggest that the literature of the National Pathological Laboratories is well worth sending for.

THE HARVARD X-LABORATORY

When this laboratory was started they adopted a very sensible motto for their guidance and to give specific information to their prospective customers. They proposed to make "films that are diagnostic" and to confine their work, at the beginning at least, to sinus and dental radiography.

That success would follow such a course was self-evident, and it did.

The prices for their work are also reasonable; for instance, the entire mouth is radiographed for \$10.

For information address or call upon the Harvard Laboratory, 522 Syndicate Building, Minneapolis, or telephone Nicollet 3661.

MINNESOTA DIGITALIS

Minnesota grows the best digitalis in the world, as completely demonstrated by the University of Minnesota in scientific tests that left no doubt.

The largest grower of Minnesota digitalis is Upsher Smith, of St. Paul, and his "Upsher Smith Digitalis" is, no doubt, the best brand to be found in any market.

Mr. Smith is a scientific man whose work commands

the respect of all chemists, and this product of his laboratory is so standardized as to give absolutely uniform results.

Mr. Smith's monograph on digitalis can be had upon application to him, and it should be in the hands of every physician who gives even one dose of this drug.

SHARP & DOHME

It is a fact, solely because of human psychology, that high-grade and low-grade articles cannot be made in the same factory by the same men, and it is also true that some factories cannot always turn out the highest grade of products; but a trained group of men working under proper conditions can well-nigh reach perfection in their products when encouraged to do so by their employers.

These introductory words lead up to the point we want to make, namely, that the pharmaceutical products, very large in number, bearing the name of Sharp & Dohme ("S & D") are of a uniformly high grade, and give uniform results to medical men, and are worthy of the highest commendation.

THE OTTAWA TUBERCULOSIS COLONY

One of the outstanding institutions devoted to the treatment of the tuberculous is located in the Middle West, at Ottawa, Illinois, in the famous "State Park" region of northern Illinois. The open-air treatment is here emphasized, where private cottages and private

suites of open-air rooms are available. Here the environment and all the aids of Nature are such as to do their utmost for the patient, but far beyond them acting alone is the directing mind of a man famous in this work, namely, Dr. J. W. Pettit, the medical director.

With such a combination, aided by the co-operation of the patient, tuberculosis yields in so large a percentage of cases that this terrible disease is robbed of most of its terrors.

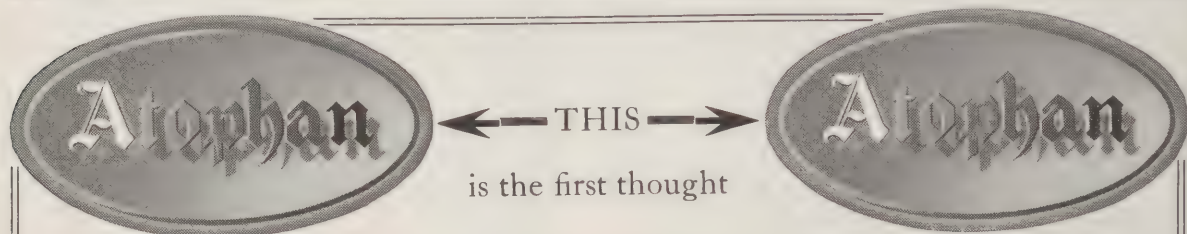
Mr. H. V. Pettit, the superintendent, will furnish all information desired and will gladly send any physician a booklet of large value.

KENILWORTH SANITARIUM

The general practitioner, whose duty it so often becomes to select a sanitarium for his patients, assumes a grave responsibility, for which he frequently receives neither compensation nor thanks, but sometimes receives undeserved reproaches. In spite of this he must be prepared to act intelligently in such cases.

If the patient is in a serious nervous or mental condition, and seeks the best obtainable facilities for treatment, with the highest medical skill, the physician will make no mistake in sending such patient to the Kenilworth Sanitarium at Kenilworth, Ill., a suburb of Chicago.

The building and equipment of this sanitarium is well-nigh perfect, and its staff is headed by Dr. Sanger Brown with Dr. Sherman Brown as resident physician.



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**Rheumatism, Gout, Neuralgia, Neuritis,
Lumbago, Sciatica,**

and generally for conditions manifested by

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THE MOUNDS PARK SANITARIUM AND HOSPITAL

The Twin Cities have a small group of institutions each of which deserves to be called by the combined title of "sanitarium and hospital," for the reason that each one does a work that is best designated by the two words.

The Mounds Park Sanitarium and Hospital stands almost at the top of this small list. It is situated across the street from the Indian Mounds Park of St. Paul, one of the most beautiful spots in the Northwest. Its building is comparatively new, commodious, and scrupulously well kept. Its staff is composed of a group of St. Paul men of high character and unquestioned professional ability in surgery, general medicine, neurology, obstetrics, and eye, ear, nose, and throat work, which constitute the departments of work done in this sanitarium and hospital. We confidently say to our readers that they will make no mistake when they refer patients to this honorably conducted institution.

THE NORTHWESTERN HOSPITAL OF MINNEAPOLIS

This hospital for many years has been under the charge of a large group of philanthropic women, who have given it a distinctive and twofold character. It is a home-like hospital with all the comforts that woman's care can provide; and it has a large staff of the foremost specialists practicing in Minneapolis with not a

single professional man on the staff whose standing is not of the highest.

The Hospital Training School for Nurses has a full three-year course, and its graduates take the highest rank among nurses and command the highest salaries and permanent employment.

Miss Corintha Blachly is the superintendent of the hospital, and will furnish any information desired.

THE FIRST NATIONAL BANK OF MINNEAPOLIS

The above-named bank is so big in resources, deposits, etc., that a person with a small account may think he is not wanted and would be lost in such an institution. Just the reverse of this is true. The new depositor knows two or three people in the bank, becomes well acquainted with them, does all his business with them, and soon finds himself as much at home as in the small country bank conducted by two or three people.

The big bank is made up of scores of small sections, and between these sections is a wholesome rivalry to make each the best of all, and the customer gets the benefit in courteous treatment and service.

It will pay every one of our readers, wherever he lives, to have an account in the First National Bank of Minneapolis.

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Unless there is much merit, indeed, very great merit. In Gray's Glycerine Tonic Comp., the testimony of

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the Physician
Exclusively*

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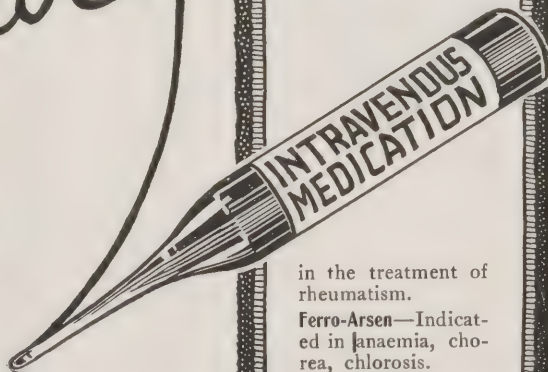
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Ready for immediate administration.

Arseno - Mer - Sodide —
Indicated in syphilis.
Salsodide — Valuable



in the treatment of
rheumatism.

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anaemia, chorea, chlorosis.

thousands of physicians who have used it practically continuously for many years, is worthless, not only as to the merit of this preparation, but as to the value of any medication whatever. That such is the case no sensible doctor will believe for a moment, for such a conclusion would make him a charlatan if he continued to practice medicine upon such a basis.

The merit of this tonic has been demonstrated too fully to put a question mark after it at this day; and such merit is a tribute to the skill of the general practitioners of early days, who, surely, knew the fundamentals of medicine even as many practitioners do not know them today.

Gray's Glycerine Tonic Comp. is a thoroughly dependable tonic, and is especially valuable for patients recovering from influenza or pneumonia.

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Nujol is an absolutely pure petrolatum of a viscosity determined by exhaustive and clinical tests to be just what the human system needs to lubricate the hardened stools due to constipation of various forms and degrees. It is in no sense a laxative—it is just a lubricant, and its use cannot possibly affect the peristalsis of the alimentary canal, and thus establish the vicious circle caused by cathartics.

Nujol is absolutely pure and uniform, being produced by the Standard Oil Company (New Jersey), which has access to the world's producing centers of the raw material from which it is made.

Nujol is the modern specific for constipation, and its qualities are set forth in a series of booklets on constipation by its manufacturers. Of course such booklets are offered free to all medical men.

PROTEOGENS

In a recent issue of the Proceedings of the Biological Society in Paris (1919 No. 23, pp. 927-929) P. Govaerts submits evidence proving that red blood corpuscles play a rôle similar to that of the phagocytes and that their action is even more rapid in destroying the toxins liberated through the destruction of invading bacteria by phagocytosis. Govaerts, through his independent work, has verified the correctness of the views of Horovitz, and the claims which have been put forth in behalf of Proteogens, in the treatment of various diseases and disorders, which, hitherto, had not yielded readily to ordinary therapeutic principles.

Proteogens are composed of vegetable proteins, enzymes, ferments, lipoids, etc., derived from a variety of non-toxic plants, specially selected and combined to meet existing conditions in the human organism, as affected by perverted metabolism and the invasion of micro-organisms characteristic of the disease.

Interesting literature, setting forth the scientific facts and theories that led to the evolution of the Proteogen therapy, can be obtained from the Biochemical Department of the Wm. S. Merrell Company, Cincinnati, Ohio.



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MERPOTIDE—five-grain tablets, containing Potassium Iodide and Mercury Protiodide. Used in conjunction with Arsphenamine and Neo-Arsphenamine.

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Represents the Medical Profession of
Minnesota, North Dakota, South Dakota, and Montana

The Official Journal of the
North Dakota and South Dakota State Medical Associations

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No. 14

TRANSACTIONS OF THE NORTH DAKOTA STATE MEDICAL ASSOCIATION, THIRTY-SECOND ANNUAL MEETING 1920

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F. L. WICKS, M. D.....Valley City

COUNCILOR—SIXTH DISTRICT SOCIETY

F. R. SMYTH, M. D.....Bismarck

COUNCILOR—SOUTHERN DISTRICT AND RICH- LAND COUNTY SOCIETIES

L. B. GREENE, M. D.....Edgeley

COUNCILOR—STUTSMAN COUNTY SOCIETY

LE ROY G. SMITH, M. D.....Jamestown

COUNCILOR—TRAILL-STEELE COUNTY SOCIETY

O. A. KNUTSON, M. D.....Buxton

COUNCILOR—TRI-COUNTY SOCIETY

CHARLES MacLACHLAN, M. D.....New Rockford

MEMBER OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION

E. A. PRAY, M. D.....Valley City

Alternate

A. J. McCANNEL, M. D.....Minot

HOUSE OF DELEGATES

CASS COUNTY AND RANSOM SOCIETY

JAMES P. AYLEN, M. D.....Fargo

FRANK D. DARROW, M. D.....Fargo

DEVILS LAKE DISTRICT SOCIETY

W. D. JONES, M. D.....Devils Lake

GRAND FORKS DISTRICT SOCIETY

JAMES GRASSICK, M. D.....Fargo

G. J. GISLASON, M. D.....Grand Forks

NORTHWESTERN DISTRICT SOCIETY

H. M. ERENFELD, M. D.....Minot

RICHLAND COUNTY SOCIETY

BLAKE LANCASTER, M. D.....Wahpeton

SIXTH DISTRICT SOCIETY

C. E. STACKHOUSE, M. D.....Bismarck

SOUTHWESTERN DISTRICT SOCIETY

A. A. WHITTEMORE, M. D.....Bowman

STARK COUNTY SOCIETY

J. W. BOWEN, M. D.....Dickinson

STUTSMAN COUNTY SOCIETY

P. G. ARZT, M. D.....Jamestown

TRI-COUNTY SOCIETY

E. L. GOSS, M. D.....Carrington

Kotana-Sheyenne, Southern and Traill-Steele Society
not represented.

COMMITTEE ON HEALTH PROBLEMS IN EDUCATION

C. J. McGurran, M. D.; R. H. Ray, M. D., F. A.
Brugman, M. D., A. A. Whittemore, M. D., and J. C. J.
Wiig, M. D.

COMMITTEE ON EDUCATION

H. E. French, M. D., H. H. Healy, M. D., and G. J.
McIntosh, M. D.

COMMITTEE ON SCIENTIFIC WORK

P. H. Burton, M. D., James P. Aylen, M. D., and
J. H. Rindlaub, M. D.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION

V. J. LaRose, M. D., F. R. Smyth, M. D., H. O. Alt-
now, M. D.

COMMITTEE ON INSURANCE

E. A. Pray, M. D., P. G. Arzt, M. D., James P.
Aylen, M. D.

COMMITTEE ON MEDICAL DEFENSE

A. Carr, M. D., C. N. Callander, M. D., and N. O.
Ramstad, M. D.

Proceedings of the House of Delegates

FIRST SESSION, MONDAY, JUNE 14, 1920

The first session of the House of Delegates of the thirty-third annual meeting of the North Dakota State Medical Association was called to order in the rooms of the Association of Commerce, Minot, North Dakota, at 9:30 P. M., June 14, 1920, the President, Dr. W. P. Baldwin, Fargo, presiding.

The Secretary, Dr. H. J. Rowe, Lisbon, called the roll. A quorum being present, the House of Delegates was declared duly constituted for the transaction of business.

As the minutes of the preceding 1919 annual meeting had been published in the official organ of the Association, *THE JOURNAL-LANCET*, on motion duly seconded, the reading of the minutes was dispensed with.

Dr. H. J. Rowe, the Secretary, presented the following report:

The past year has been one of progress in that physicians who were engaged in war work have returned to civil life and most of them have resumed their practice. Several new men have settled in the state to fill places vacated by death. There were five deaths among the physicians in the state during the past year, the largest toll by death that has occurred during any one year.

ANNUAL REPORTS

The annual reports made to the Association are worthy of consideration. Two societies have so increased their membership that they are entitled to two delegates,—namely, Cass County Society and the Sixth District Medical Society. Seven societies have fewer members than they had last year; and five have gained in membership. Cass County had the greatest increase, namely, sixteen. Two societies have the same membership as in 1919.

MEMBERSHIP

The membership of the Association as compared with that of last year has diminished from 402 to 395. This decrease is probably due to the fact that some local secretaries have been changed, and the new incumbents are not familiar with the methods employed, and possibly are unacquainted with the physicians in the district. It should be the aim of every component society to see that every practitioner within its bounds, who is a reputable physician, becomes a member of the society. A united band of men makes a strong combination in any organization, and there is especial need that physicians should be united in their work.

At the New Orleans meeting of the American Medical Association the House of Delegates adopted a recommendation that the work of the subcommittee on Health Problems in Education be endorsed, and that the secretary of the Council ask the secretary of each State Association to have a committee of three appointed to attend the next meeting of the State Teach-

ers' Association to ask for the appointment of a committee from the State Teachers' Association to cooperate with the medical profession in promoting better health conditions in our public schools.

On motion, duly seconded, this report was approved as read.

COMMITTEE ON CONSTITUTION AND BY-LAWS

Dr. George M. Williamson, Chairman, reported that the Constitution and By-Laws had been printed for distribution to the members, as submitted and adopted at the 1919 meeting. Dr. Williamson suggested that the thanks of the Association be extended to Dr. Grassick for his part in preparing the report, particularly for the historical sketch on the first page.

(The bill for printing was to be submitted.)

Dr. Stackhouse moved that the thanks of the Association be extended to Dr. Grassick, and that the Treasurer be instructed to pay the printing bill. Seconded by Dr. Whittemore, and carried.

The Secretary called attention to the fact that the new constitution provides for a delegate for every twenty-five members, but the societies had not been officially notified as to this change, and were represented only by one in fifty, as heretofore.

COMMITTEE ON NECROLOGY

In the absence of Dr. L. H. Labbitt, the Secretary read the following report:

Each year it becomes our duty to honor the memory of those of our number who pass to the Great Beyond. This yearly report makes us realize the courage of our pioneer physicians who faced the hardships of early practice in the Territory of Dakota and the early period of the State, and the sterling character they possessed, in not only ministering to their widely scattered patients, but in finding time to lay the foundation for medical education and to become an honored part of their communities.

EDWARD M. DARROW

DR. DARROW, of Fargo, was born in Winnebago County, Wis., January 16, 1855, and died in Fargo, N. D., November 25, 1919. His medical education began under the direction of Dr. Thomas Russell of Oshkosh, Wis. He then attended Rush Medical College, where he graduated in 1878.

He commenced practice in Fargo in that year and remained there until his death, faithfully serving those who honored him as a man and as a physician. He was one of the State's best known surgeons and enjoyed the confidence and respect of his colleagues in the medical societies. He was the first superintendent of the Board of Health of Dakota Territory, and also issued the first license to practice within the Territory.

He was a member of the Cass County Medical Society and State Medical Association, and of the American Medical Association.

His death was counted a distinct loss to the medical

profession of the state, and to the community to whose service his life was dedicated.

A. G. PATTERSON

Dr. Patterson, of Lisbon, was born March 15, 1865, at Grafton, Ontario. He graduated from Trinity University, of Toronto, in 1889, after which he located in Edgeley, where he practiced one year, moving to Hamilton, Montana, to a mining practice. This was given up, and he returned to Chicago and practiced with Dr. James Adair until the latter's death, when Dr. Patterson located in Lisbon, where he remained in continuous active practice for twenty-eight years.

Few men have enjoyed the success or popularity of Dr. Patterson, and he is entitled to be enrolled as one of the truly pioneer physicians of the state.

MARTIN KRANZ

Dr. Kranz, of Mandan, was born in Caledonia, Wisconsin, in 1861, moving early to Mankato, Minnesota. His early education was obtained at the St. Cloud Normal School, and he was a graduate of the Medical School of the University of Minnesota. He located at Mandan, N. D., nine years ago and was active in his local and the State Association. His studies took him to Austria and other clinical centers of Europe, as well as to Chicago and New Orleans.

GUSTAV A. MATTHEWS

Dr. Matthews, of Napoleon, was born on September 13, 1873, in Neukrug, in the Province of Posen, Germany. His medical education was obtained at the University of Minnesota and Rush Medical College.

He began his medical practice at Dresden, N. D., and the following year located at Napoleon, where he has remained since 1905.

His health suffered severely during the influenza epidemic of 1918, and the strain of those trying times led to his collapse, from which he never fully recovered.

He died April 14, 1920, at Bismarck.

CHRISTIAN KACHELMACHER

Dr. Kachelmacher, of Fargo, who had been in poor health for some time, undoubtedly owing to the high pressure at which he worked, was on his way to a sanitarium to regain his health when in a fit of despondency he died in a Chicago hotel on October 29, 1919.

Dr. G. M. Williamson called attention to the fact that a Committee on Necrology was provided for in the new Constitution, Section 7, page 12. He moved that the report be accepted. Seconded and carried.

COMMITTEE ON VENEREAL DISEASE

The President and Members of the North Dakota Medical Association:

Owing to the campaign being waged against venereal diseases by the United States Public Health Service and the state health authorities, the public generally is being awakened to the dangers and ravages of these diseases.

Much has been done from a moral and social standpoint to educate and instruct people of all classes as to methods of controlling and suppressing diseases that are a menace to the human race, and whose baneful effects continue to be transmitted to generations yet unborn. There is much need for further investigation

from a medical point of view as to the clinical history of venereal disease, and an inquiry as to reliable methods of diagnosis and treatment.

Your Committee would, therefore, recommend that the State Medical Association go on record as requesting each local medical society to devote one meeting each year to a discussion on venereal disease. If this is done the State Bureau of Venereal Disease has agreed to loan a film, for moving pictures, to such societies as can use it and to send a representative of the Bureau to explain the working of the venereal-disease law of this State.

The film is entitled "*The Modern Diagnosis and Treatment of Syphilis*," and shows methods of obtaining smears for examination for the spirochæta pallida; of securing blood for the Wassermann test; of obtaining and examining spinal fluid; and other diagnostic methods. The technic of making the Wassermann test is demonstrated. The administration of arsphenamine and the intramuscular injection of mercury and other recognized methods of treatment are shown.

The Committee further calls attention to the resolution passed at the last meeting of the State Medical Association, providing, "That the North Dakota State Medical Association heartily endorses the efforts of the United States Government to stamp out venereal disease, and pledges the assistance of its members to the State Board of Health of North Dakota in enforcing the law and regulations for the control of venereal disease in this State."

(Signed) F. R. SMYTH, M. D., Chairman.

H. H. HEALY, M. D.

Dr. G. J. Gislason moved that the report be accepted. Seconded by Dr. Charles MacLachlan, and carried.

COMMITTEE ON MEDICAL HISTORY

Dr. James Grassick presented the following report:

House of Delegates, North Dakota Medical Association, Gentlemen:

Your Committee having in charge the collecting and arranging of data for a history of North Dakota Medicine, authorized by your honorable body at previous sessions, begs to report as follows:

The recommendations a year ago were that each County or District Society be a unit for collecting historical incidents within their respective jurisdictions bearing on the past or present of medicine, and that they arrange the same in proper order and transmit to a central clearing-house for final disposal.

The attention of leading members of the profession was drawn to the matter by letter and otherwise, and response, more or less hearty, was given. In this way some very valuable material has been collected, but there is still much to be done and it is earnestly urged that societies interest themselves to the extent of making official contributions to the project. It is further believed that individual members of our body, pioneers of our state, have information that would be invaluable for the future. Special effort should be made to have this historical lore placed on record while memories are fresh and retentive.

During the year there has passed from our midst one whose words would have thrilled our hearts, but

his voice is now stilled forever. He had promised us his "story" and, had he lived a few months longer, we should all have been the richer because of it. Our lamented friend and brother, the late Dr. E. M. Darrow, of Fargo, is but one of the many, and with their passing goes personality, knowledge, philosophy, fellowship, and experience. Would that it were possible to have some of these fine human touches preserved.

In matters of special accomplishments may be mentioned the following:

Making a certified copy of the name, age, address, school, when graduated, and when and by whom licensed, of every physician registered in the Territory of Dakota from June 5, 1885, when the first law regulating the practice of medicine, making licensure compulsory, took effect, until statehood and from that time to the present. This has been arranged with an alphabetical index so that any name can be referred to with ease. In the event of loss of any of the original entries now in the possession of the State Board of Medical Examiners, through whose courtesy the transcript was made possible, this duplicate will supply the missing data and prove of inestimable value to those requiring certified copies of the same. These records are now bound in permanent form and are on file with your Committee.

Since the burning of material in the possession of our Secretary some years ago there has been no official record to show any of our past activities. Noting this great lack of information on such important questions, your Committee undertook to fill in some of these gaps, and after much research work has been able to compile a historical sketch from the time when the first Territorial State Society was organized at Milbank, South Dakota, in 1882, to the organization of the North Dakota Medical Society, in 1887, to its reorganization and change of name to the North Dakota State Medical Association in 1904 and to the present time. In addition to this we have compiled a list of officers (President, Secretary, and Treasurer), with place and date of each annual meeting, since 1887. This material has been furnished to your Committee on Constitution and By-Laws and will appear in their report. There has been procured through various sources,—personal interviews, correspondence, periodicals, newspapers, etc.,—a mass of material that has been woven, more or less completely, into our web of history.

It may be interesting to know that about one hundred and fifty biographies of medical men of our state, many of them now dead, have been written. Among these may be mentioned Dr. W. D. Dibbs, the physician who first, in 1862, and later, in 1863 and 1864, crossed the Dakota prairies, on the overland trail, as surgeon for the military escort under Captain James L. Fisk, "To escort Emigrants from Fort Abercrombie to Fort Benton and to Walla Walla"; Dr. William Pitt Cleveland, of Caledonia, the first registered physician in the Territory of Dakota; Dr. John Montgomery, of Ardock, the first Secretary and Treasurer of the North Dakota Medical Society; and Dr. J. G. Millspaugh, then of Park River, the first president of the North Dakota Medical Society,—a quartette of worthies that are entitled to first place in our annals.

Your Committee would respectfully recommend that the work be continued along the lines heretofore approved by the Association, and the delegates be instructed to place the matter before their respective

societies so that by united and earnest action a successful issue will be the outcome.

All of which is respectfully submitted.

(Signed) JAMES GRASSICK, M. D.,
Chairman.

Dr. Charles MacLachlan moved that the report be adopted. Seconded by Dr. E. L. Goss, and carried.

Dr. G. M. Williamson said he considered this one of the most important committees in the Association, and thought every effort possible should be used to furnish Dr. Grassick with the information he asked. He was acquainted with his efforts to compile these data, and, if the matter were allowed to slip by for a few years, it would be impossible to secure much desirable material. He therefore urged that the delegates should give every assistance within their power, and requested Dr. Grassick to give some information regarding the publishing of the report.

Dr. Grassick said, in reference to publishing the material, that he had taken the matter up with several publishing houses, but the present cost of work and material made it almost prohibitive. He had then taken it up with the State Historical Society, and the Secretary of that Society had informed him that when the data were all collected and arranged in proper form there would be no difficulty in getting it published as a State document, the State to pay the expenses. In addition the Association would be given one hundred volumes free, and there would be placed on sale within the state additional volumes at approximately \$2.50 each. Dr. Grassick thought this would be the only feasible way of having the history published, but the field was not nearly covered. The history must be completed, and this would be possible only by the active co-operation of the different societies.

He urged that each of the component societies take the matter up and get all available data, and send the material in to headquarters. Some of the societies had written up their districts very well. Some time ago Dr. MacLachlan had sent in a very good report from his district and Dr. Stickney had sent in one that was fit to appear in any publication.

Dr. MacLachlan explained that in his local society they had adopted the plan of having a paper at each meeting from one of the oldest members of the district, in which they related their experiences and what they knew of medical practices and practitioners in their district. This helped to keep up interest, and by following this plan through the year a rather complete

history of the medical men in the district could be obtained.

Dr. Blake McK. Lancaster thought many of the older men did not realize the reverence and respect the younger men had for their experiences. He felt that if an autobiography could be written by the older men much information would be obtained that would be difficult to get otherwise.

Dr. MacLachlan's motion was unanimously carried.

COMMITTEE ON TUBERCULOSIS

Dr. James Grassick submitted the following report:

To the House of Delegates,

North Dakota State Medical Association,
Gentlemen:

Your Committee on Tuberculosis begs leave to report that it has quite carefully looked over the field and is of the opinion that the sanitary conditions of home and community life throughout the state have shown a very marked improvement in the past few years. The multiplicity of our health activities, although inco-ordinated and wasteful, in the aggregate, has resulted in much educative work that must have as its effect the ultimate lessening of tuberculosis and, incidentally, all other communicable diseases. At the apex of the tuberculosis work in our state is placed the Sanitarium at Dunseith. Although its capacity and equipment is far from being adequate to supply the demand upon it, the quality of the work done in caring for those that are placed there for treatment, together with the influence which it exerts in moulding the health thought of our state, commend it to the kindly consideration of the members of our profession.

It has a capacity of about eighty-five patients, and the last Legislature made provision for a new infirmary building, now in course of erection, to hold approximately fifty patients more. In its present stage of development it may, in a general way, be said to have a limited field, although a very important one. It can reach, running at full capacity, only a small percentage of those needing care and supervision. The great mass of the tuberculous must, by force of circumstances, be cared for in their homes. A program of education, featuring right-living conditions and better understanding of the principles of sanitation and hygiene in the home, would seem to be a rational method of blocking this stream of death, suffering, inefficiency, and loss that has been flowing through the years.

Dr. Charles Hatfield, Managing Director of the National Association, in his annual report says:

"The experiences at Farmington supplemented by the extensive experience of large industrial corporations, such as the Metropolitan Life Insurance Company, the New York Telephone Company, and others, statistics of which have recently been made public, indicate that where intensive educational, nursing, and institutional methods are applied to large groups of population, the tuberculosis death-rate, in common with that of other infectious diseases, can be greatly reduced, and that such public-health work pays large

dividends to communities and other agencies which adopt these methods."

In North Dakota the work has been developing along the lines indicated. With our Community Nurses, our School Nurses, our Red Cross Nurses, our Venereal Disease Nurses, our Tuberculosis Nurses, our Field Workers, and other welfare agencies, all bringing a message of good health and rendering a service of helpfulness to the people, we may soon expect to see the direct effect of their activities.

During the past year the Anti-Tuberculosis Association has been doing more intensive work than ever before. They have a director putting in full time, two Public Health Nurses continuously in the field, a Field Worker, and an assistant giving lectures, demonstrations, exhibitions, etc., at fairs and other public gatherings. In addition to their other activities they maintain an Open-Air School at the State Sanitarium. It is an encouraging sign of the times that wherever the workers go they are accorded a hearty welcome by the people, who are eager to know the truth. It is worthy of note that the individual members of the medical profession are in complete accord with the aims of our anti-tuberculosis workers and are always ready and willing to lend them aid. We respectfully urge the influence of our Association in bringing about a closer co-operation of the various health activities of the State, to the end that waste may be lessened, duplication of work prevented, and efficiency in the control of disease increased.

All of which is respectfully submitted.

(Signed) J. GRASSICK, M. D., Chairman.

F. D. QUAIN, M. D.,

J. G. LAMONT, M. D.

Dr. F. R. Smyth moved that the report be adopted. Seconded by Dr. G. M. Williamson, and carried.

NEW BUSINESS

Dr. Clyde E. Stackhouse, Bismarck, introduced the question of the Workmen's Compensation Law in respect to the Surgeon's Fee Bill, stating that his local society had instructed its delegates to bring this matter before the House of Delegates. In their opinion the present fee bill was too low and an attempt should be made to bring about a change. He asked for an expression of opinion from the other delegates.

Dr. Fred Ewing, Kenmare, thought another thing should be changed, and that was that the physicians should be allowed to keep their skiagraphs.

Dr. Stackhouse stated that he had been appointed chief medical examiner for the Workmen's Compensation Act in July, 1919, and at that time all these things were made up. Since he had been doing the work he had found that all the fees were too small and that the Fee Bill was not complete. He had done his best to make the Commissioners see that the fee bill should be larger in all lines, and this was the general

sentiment all over the state. The State of Oregon had been working successfully for six or seven years under the Workmen's Compensation Act, and he had sent for a copy of their fee bill, which he had received and presented to the Commissioners. He had also asked the Secretary if a commissioner could not be sent to the meeting of the State Medical Association so that the matter could be threshed out at this time, and a commissioner would be present at a subsequent meeting of the House of Delegates or would meet with a committee. Dr. Stackhouse requested the Chairman to appoint a committee for this purpose so that a complete fee bill might be worked out which would be satisfactory to the medical profession, for the Workmen's Compensation Bureau wanted to work in harmony with the doctors. He considers the law good and thought it had worked out well in the past year except that the profession was not satisfied. The fee bill from Oregon would probably be satisfactory to everyone. It was quite complete, and the fees were considerably larger than those of North Dakota, but he felt sure the commissioners would be willing to adopt a similar fee bill.

Dr. Stackhouse wished to have this matter straightened out so that his office could work satisfactorily with all the doctors.

Dr. Charles MacLachlan moved that the Chair appoint a committee consisting of one member from each district in the State to meet the member of the Board who was to be present on Tuesday. Seconded by Dr. Harry M. Erenfeld, Minot, and carried.

The Chair thereupon appointed the following committee: Dr. Paul H. Burton, Fargo, Cass County; Dr. E. L. Goss, Carrington, Tri-County; Dr. Wm. F. Sihler, Devils Lake, Devils Lake; Dr. T. N. Yeomans, Minot, Northwest; Dr. Blake McK. Lancaster, Wahpeton, Richland; Dr. C. E. Stackhouse, Bismarck, Sixth District; Dr. H. H. Healy, Grand Forks, Grand Forks; Dr. A. A. Whittemore, Bowman, Southwest; Dr. Philip G. Arzt, Jamestown, Stutzman.

On motion the House of Delegates adjourned at 11:15 to reconvene immediately after the morning session on Tuesday, June 15.

SECOND SESSION—TUESDAY, JUNE 15, 1920

The second session of the House of Delegates of the thirty-third annual meeting of the North Dakota State Medical Association was called to order in the rooms of the Association of Com-

merce, Minot, North Dakota, at 11:30 A. M., June 15, 1920, the President, Dr. W. P. Baldwin, presiding.

The Secretary called the roll, and a quorum being present the House of Delegates was declared duly constituted for the transaction of business.

The Secretary read the minutes of the preceding meeting of the House of Delegates, which upon motion, duly seconded and carried, were accepted after slight correction.

REPORT OF THE COUNCIL

The Chairman stated that there was nothing to report at this time.

REPORT OF THE ATTORNEYS

The Secretary presented the following report from the Attorneys for the Association.

North Dakota State Medical Association,
Minot, N. D.

Gentlemen: Since my last report to you on the 20th of June, 1919, the following matters have been handled by us as attorneys for the Association, and by insurance companies where we have personal knowledge of the matter, as follows:

At the time of the last report the case of Clarence Young vs. W. B. Scott was still pending. Since that time we have obtained dismissal of the action without cost or expense to the Association, and a judgment has been entered dismissing the same.

Two new cases have been commenced, one by Ella Springer and one by Lawrence Springer against Chas. H. McDonell, of Hankinson. We have answered for the doctor on behalf of the Association, and the cases are pending in Richland County. They were passed at the last term of the District Court at the request of the plaintiff's attorney, and we have not been notified as to their being on for trial at the present term of court.

Dr. A. Chernauek, of Dickinson, was sued by Bart, and Attorney J. W. Sturgeon appeared for the doctor. I was advised that they had already replied in the case, and we advised them that we would give them all the aid necessary, but have heard nothing further in regard to the matter.

An action was brought by Betty Lind against Dr. A. L. Doe, of Bowbells. The doctor had insurance with the Maryland Casualty Company, and we were employed by them to defend the action. A settlement has practically been agreed upon, but not finally consummated.

The case of Putney vs. Dr. Johns is still pending in McHenry County, in which the insurance company is defending, but there is no question but what the action for malpractice will eventually be dismissed.

Dr. W. R. Shortridge, of Flasher, was sued by Lloyd B. Fisher. He was insured, and Attorneys Miller & Zueger, of Bismarck, were employed by the insurance company to defend the action. We have never heard whether the action has been tried or result of same.

The action of Johnson vs. Erenfeld, Nestos & Brugman has been settled without expense to the Medical Association.

For information of the members of the Association I will state that the following cases have been looked after by us since we commenced acting for the Association:

Carrie Lee vs. W. B. Baldwin, Casselton, N. D.
 Mrs. Petty vs. Dr. Wood, Jamestown, N. D.
 Hager vs. I. D. Clark, Harvey, N. D.
 Young vs. W. B. Scott, Ray, N. D.
 Thorson vs. Dr. Brenckle, Kulm, N. D.
 Ott vs. O. C. Maercklin, Dickinson, N. D.
 Monteith vs. Heimark, Steele County, N. D.
 Semchenko vs. Nickolson, Max (now of Williston, N. D.)
 Johnson vs. Erenfeld, Nestos & Brugman, Minot, N. D.
 Halvorson vs. Dr. V. Irving, Bantry, N. D.
 Springer vs. McDonald, Hankinson, N. D.

These cases have all been disposed of, except the case of Springer vs. McDonald, with this result:

Lee vs. Dr. Baldwin was tried, and a verdict for the doctor returned. Petty vs. Wood was tried, and a verdict returned in favor of the doctor. Semchenko vs. Nickelson was tried and a verdict directed dismissing the action. Monteith vs. Heimark was tried, and a verdict was recovered against the doctor for \$3,250.00. Hager vs. I. D. Clark, of Harvey, was tried and dismissal obtained as to Dr. I. D. Clark. Dr. Clark's brother was also sued in the suit. He was defended by the Medical Protective Association, of Fort Wayne, Ind., and a verdict was recovered against the doctor. The case of Thorson vs. Dr. Brenckle and the cases of Ott vs. Dr. Maercklin and Halvorson vs. Dr. Irving were all settled without any recovery against the doctors, and without any expense to the Association.

Out of the ten cases thus disposed of a verdict and recovery was had only in one case, and that case, as will more fully appear by my special report on the case, would never have been defended by the Association had the matter been called to the attention of the Association before that time, as a settlement would have been advised.

It will also be noted that out of these ten cases the Association was only put to expense in the disposal of them so far in five of the cases, the other five being dismissed without expense to the Association.

Respectfully submitted,

BOSARD & TWIFORD.
 By R. H. BOSARD.

Dr. G. M. Williamson, Grand Forks, called attention to the Section on Medical Defense as it appears in the Constitution and By-Laws. He thought that possibly heretofore many of the members did not know what medical defense means. This Section had been prepared by Mr. Bosard and was fairly complete so that there is no excuse for any physician not knowing what it means, and what his responsibility is in the matter, for every member of the Association would have a copy of the Constitution and By-Laws.

Dr. Fred Ewing, Kenmare, moved that the report be accepted. Seconded by Dr. G. J. Gislason, Grand Forks, and carried.

COMMITTEE ON MEDICAL EDUCATION

Dr. H. E. French, Grand Forks, stated that the Committee had not met because there seemed to be nothing to do. Partly on account of the growth and development of the state and because of the passing of the poorer schools, the members were coming in very nicely. They had a beginning class of twenty-two, and if the Legislature did not come to the rescue in some way so that the staff, equipment, and all facilities could be improved, they would lose their rating as a first-class school.

Dr. G. M. Williamson suggested that it would be well for Dr. French to prepare a resolution and present it to the Association for adoption. They could then go before the Legislature next winter with a request for a proper appropriation and have the Association behind them, which would undoubtedly be of assistance.

COMMITTEE ON STATE PUBLIC HEALTH ASSOCIATION

Dr. H. E. French, Grand Forks, presented the following report:

To the House of Delegates of the North Dakota State Medical Association,
 Gentlemen:

Your Committee, appointed at the 1919 annual meeting, to consider the advisability of organizing a state public health association would report as follows:

After more or less individual conversation and correspondence with others, more particularly laymen, the Committee met at Devils Lake on December 30, 1919.

The Committee decided to try out the possibility of a real public health association with a popular membership upon some such basis as the organization of the Red Cross. A list of about forty-five tentative directors, representing as far as possible all parts of the state and all organizations, official or voluntary, interested in public-health work, was prepared, and a meeting of the directors for further conference and possible organization was planned.

The meeting of the directors was called on May 13, 1920, after a full statement of the activities of the Committee had been sent out. A few encouraging letters came in in response to the call, but the attendance was small. After a full discussion a committee was appointed to consider the question still further and to make a recommendation to your Committee.

The committee of the tentative directors, which was also representative so far as might be of the various health activities, met on May 19, 1920. After consideration it was decided to recommend not a popular public health association, but a Joint Committee on Public Health, consisting of one or more representatives from each of the existing official health agencies and the various voluntary organizations that are interested in public health work. The Joint Committee should consider then the Secretary of the State Board of Health, the Director of the Bureau of Venereal Disease, the President of the Anti-Tuberculosis Asso-

ciation, and other similar officers, and the Chairman of the Health (Public Health or similar) Committee of the State Medical Association, the State Nurses' Association, the Red Cross, the State Educational Association, the Federation of Women's Clubs, the Woman's Christian Temperance Union, and all other voluntary organizations that have similar committees. The Joint Committee should meet once a year, or as occasion demands. Its function should be to enlighten the various component organizations as to the health plans and activities of each, and to secure harmony of effort and of legislative programs.

Your Committee would recommend that the State Medical Association approve the Joint Committee plan. We would further recommend that the Secretary of the State Board of Health be requested to take the lead in attempting to secure the co-operation of the various organizations and to assume leadership not only in organization, but in the future meetings and activities of the Joint Committee.

(Signed) C. J. MCGURREN, M. D.,
J. G. LAMONT, M. D.,
H. E. FRENCH, M. D., Secretary.

Dr. Paul H. Burton, Fargo, moved that the report be approved as read. Seconded by Dr. Blake McK. Lancaster, Wahpeton, and carried.

Dr. A. A. Whittemore, Bowman, called attention to the fact that the Federal Public Health Association had requested the State Association to co-operate with their committees, and stated that there was to be a meeting of a committee on public health in Fargo on June 18, and he invited the co-operation of any committee that was appointed.

Dr. Whittemore also stated that in looking over the Constitution he noted that among the Standing Committees no provision was made for a Committee on Public Health. He did not know whether there was any provision in the Constitution proper on that subject, but if there was none he wished a motion prepared for an amendment that would provide for this. He felt that an Association of the standing of this one should have a Committee on Public Health.

Dr. G. M. Williamson, Grand Forks, said that the Committee on Public Health was provided for in the Committee on Public Policy and Legislation, Chapter VIII, Section 3.

Dr. Whittemore was of the opinion that such an important thing should not be a side issue of another committee. Public health is a large subject in itself, and he felt it should have a special committee.

Dr. Fred E. Ewing, Kenmare, thought the committee provided for in the Constitution was largely a legislative committee, and that there was no objection to having a committee on public health.

Dr. James Grassick, Grand Forks, felt that Section 3 of Chapter VIII covered the matter very well. Another committee would be a matter of duplication, and he did not see how it would improve this or add anything to the efficiency of it.

Dr. Whittemore expressed himself as willing to let the matter drop for a year to see if the committee neglected public health. If a committee was appointed to attend the meeting in Fargo he wished to be notified who they were.

Dr. H. E. French, Grand Forks, stated that their committee was appointed with the idea of forming a State Public Health Association. He did not realize that they had such a committee as that provided for in Section 3, but thought the committee as outlined in the Constitution ought to do the work. The more committees the less efficient the work.

Dr. F. R. Smyth, Bismarck, said he was a member of the committee Dr. Whittemore mentioned. The medical profession was well organized, and he thought it well for that committee, when it met, to appoint a committee to confer with the Association, but too many committees were not advisable. Some separate agency might come in and with an efficient lobbyist go about and change a bill without the knowledge of the committee. Many bills were killed in this way. If the Association had a bill to present why not come up with the Association back of them and get it through? When committees came from this and that thing and wanted a bill changed to fit their ideas there was no chance of getting it through.

Dr. Whittemore said that for years they had tried to institute some public-health organization and it was the consensus of opinion that some lay member should present this bill. While he was on the State Board they formulated a committee to co-operate with various other committees, and for the last two sessions their resolution had been presented by the State Board of Health. There had been no confusion or duplication in presenting the bills. Whether it was convenient for anyone to come down to the meeting in Fargo or not he would see that there was no duplication with the other committees at any time. If there were any lay bodies or associations that had public-health committees he would get in touch with them and try to fuse their ideas and have one bill presented by whoever seemed to be the most desirable party.

Dr. Smyth stated that the committee he was

on prepared and presented a bill at the last Legislature in agreement with the Board of Health, and he saw the bill before it was presented, but returned it with the notation that it was entirely too voluminous and not suited to this State, although as a member he would not oppose it in any way. Bills had usually passed the first or second reading and come back and been killed in the House or Senate. The bill Dr. Whittemore referred to was not even read for it was so voluminous they would not listen to it.

APPOINTMENT OF NOMINATING COMMITTEE

The President appointed the following members to serve as a Nominating Committee: Dr. George M. Williamson, Grand Forks; Dr. Clyde E. Stackhouse, Bismarck; Dr. Philip G. Arzt, Jamestown.

NEW BUSINESS

Dr. George M. Williamson, Grand Forks, moved that in the future the first meeting of the House of Delegates should be called for 8:30 A. M. on the first day of the meeting, instead of the night before. He thought more members would be present and it would be possible to have a better meeting at that time. Seconded by Dr. Clyde E. Stackhouse, Bismarck, and carried.

On motion the House of Delegates adjourned to reconvene at 8:30 Wednesday morning.

THIRD SESSION, WEDNESDAY, JUNE 16, 1920

The third session of the House of Delegates of the thirty-third annual meeting of the North Dakota State Medical Association was called to order in the rooms of the Association of Commerce, Minot, North Dakota, at 8:30 A. M., June 16, 1920, the President, Dr. W. P. Baldwin, presiding.

The Secretary called the roll, and a quorum being present the House of Delegates was declared duly constituted for the transaction of business.

COMMITTEE REPORTS:

NOMINATING COMMITTEE

The Secretary presented the following report of the Nominating Committee:

For President—Dr. Fred Ewing, Kenmare.

President-elect—Dr. H. E. French, Grand Forks.

First Vice-President—Dr. E. P. Quain, Bismarck.

Second Vice-President—Dr. W. C. Fawcett, Starkweather.

Secretary—Dr. H. J. Rowe, Lisbon.

Treasurer—Dr. W. F. Sihler, Devils Lake.

COUNCILORS

Dr. Paul H. Burton, Fargo.

Dr. F. R. Smyth, Bismarck.

Dr. G. M. Williamson, Grand Forks.

DELEGATE TO AMERICAN MEDICAL ASSOCIATION

Dr. E. A. Pray, Valley City.

ALTERNATE

Dr. A. J. McCannel, Minot.

RECOMMENDATIONS FOR STATE BOARD

MEDICAL EXAMINERS

Dr. A. W. Skelsey, Fargo.

Dr. J. C. Suter, Grafton.

Dr. A. D. McCannel, Minot.

(Signed)

GEO. M. WILLIAMSON, M. D.,

C. E. STACKHOUSE, M. D.,

P. G. ARZT, M. D.

Dr. W. F. Sihler, Devils Lake, said that he had been treasurer for a number of years, and, while he considered it quite an honor, he felt that the office should be passed around and wished to withdraw his name.

Dr. Paul H. Burton, Fargo, nominated Dr. J. P. Aylen, Fargo. Seconded by Dr. E. P. Quain, Bismarck.

Dr. James Grassick, Grand Forks, moved that the report of the Nominating Committee be accepted as amended, with Dr. J. P. Aylen as treasurer, and that the Secretary cast the unanimous vote of the Association for the gentlemen named therein. Seconded by Dr. J. G. Lamont, and carried.

The Secretary reported the ballot cast, and the officers were declared duly elected.

REPORT OF THE TREASURER

Dr. W. F. Sihler, Devils Lake, presented the following report:

TREASURER'S REPORT

June 1, 1919, to June 1, 1920

RECEIPTS

Balance on hand June 1, 1919.....	\$1,358.81
No. 239. Devils Lake Dist. Med. Soc.....	3.75
No. 237. Kotana Med. Soc.....	24.00
No. 238. Northwestern Dist. Med. Soc.....	315.00
No. 239. Devils Lake Dist. Med. Society.....	3.75
No. 240. Southwestern Dist. Med. Soc.....	5.00
No. 241. Sixth Dist. Med. Soc.....	15.00
No. 242. Northwestern Med. Soc.....	20.00
No. 243. Southern Dist. Med. Soc.....	5.00
No. 244. Kotana Med. Soc.....	16.00
No. 245. Northwestern Dist. Med. Soc.....	15.00

No. 246. Northwestern Dist. Med. Soc.....	15.00
No. 247. Cass County Med. Soc.....	15.00
No. 248. Northwestern Dist. Med. Soc.....	5.00
No. 249. Traill-Steele County Med. Soc.....	15.00
No. 250. Kotana Med. Soc.....	40.00
No. 251. Southwestern Med. Soc.....	45.00
No. 252. Devils Lake Dist. Med. Soc.....	150.00
No. 253. Richland Co. Med. Soc.....	85.00
No. 254. Southwestern Med. Soc.....	10.00
No. 255. Grand Forks Med. Soc.....	325.00
No. 256. Southern Med. Soc.....	55.00
No. 257. Cass County Med. Soc.....	260.00
No. 258. Traill-Steele Med. Soc.....	55.00
No. 259. Sixth Dist. Med. Soc.....	285.00
No. 260. Tri Co. Med. Soc.....	10.00
No. 261. Sheyenne Valley Med. Soc.....	105.00
No. 262. Cass Co. Med. Soc.....	5.00
No. 263. Southern Dist. Med. Soc.....	5.00
No. 264. Tri Co. Med. Soc.....	85.00
No. 265. Stutsman Co. Med. Soc.....	90.00
No. 266. Northwestern Dist. Med. Soc.....	310.00
Dr. Witherstine (by error Order No. 199)	75.00
No. 267. Stark Co. Med. Soc.....	75.00

Total Receipts for year.....\$3,902.56
Total Expenditures1,823.86

Cash on hand.....\$2,078.70
Savings account June 30, 1919.....\$1,551.92
Savings account interest to July 1, 1920.....63.78
Savings account interest on Liberty Bond.....62.70

Total cash on hand.....\$3,757.10
One Liberty Bond.....\$1,000.00
\$4,757.10

Audited and approved:

F. R. SMYTH,
P. H. BURTON.

EXPENDITURES

No. 195. H. J. Rowe, salary, etc.....	\$230.00
No. 196. Irene Snyder, traveling expenses....	63.64
No. 197. W. H. Witherstine, donation.....	75.00
No. 198. Grand Forks Herald Co., programs...	38.00
No. 199. W. H. Witherstine, dup. of No. 197...	75.00
No. 200. Bosard & Twiford, N. C. Washburn...	151.00
No. 201. G. M. Williamson, stenographer.....	28.25
No. 202. Journal-Lancet	192.17
No. 203. Mrs. Irene Snyder, stenographer.....	101.90
No. 204. Potter & Potter, stationery.....	22.00
No. 205. Potter & Potter, fee bills.....	14.50
No. 206. Bosard & Twiford, retainer's fee.....	300.00
No. 207. H. J. Rowe, salary.....	100.00
No. 208. Journal-Lancet	203.00
No. 209. E. A. Pray, A. A. M. expenses.....	100.00
No. 210. Potter & Potter, printing.....	8.00
No. 211. H. J. Rowe, salary.....	100.00
No. 212. A. J. McCannell, printing and postage	20.40

Total Expenditures\$1,823.86

The President appointed an Auditing Committee, consisting of Dr. F. R. Smyth and Dr. Paul H. Burton to audit the Treasurer's report.

COMMITTEE ON FEE-BILL FOR WORKMAN'S COMPENSATION ACT

Dr. H. H. Healy, Grand Forks, reported that the Committee met with the Commissioner and went over the Oregon fee-bill in detail. They felt that it was a very reasonable fee-bill and much better than the one they were working under in North Dakota, and much more comprehensive. It raised the fees at least 50 per cent, and also increased the mileage charge. Besides this they agreed to pay necessary traveling expenses. In the winter some of the men had to pay seventy-five cents or a dollar a mile, and they agreed to pay this extra item if it was attached to the bill. In the summer when the men were using their own cars they might not be willing to pay that expense, but in the winter they would pay the extra traveling costs. (Dr. Healy here read extracts from the fee-bill regarding fees for different operations, etc.) Dr. Healy thought this a reasonable schedule to work under and said that it also simplified the blank somewhat.

Dr. J. P. Aylen, Fargo, thought the removal of a foreign body imbedded in the eye should not be left to the specialists, for the general practitioners very frequently had to remove them. If this was left as at present it would mean that the doctor who did this work would get no fee unless he was a specialist in this line.

Dr. Healy thought that the two lines referring to this item could be stricken out of the bill.

Dr. Aylen moved that these two lines be stricken out, if agreeable to the Committee, and that the report be accepted. Seconded by Dr. James Grassick, and carried.

Dr. J. P. Aylen, Fargo, moved that a provision be incorporated in the blank covering the care of cases with extra risks or responsibilities, and that there be an increased fee for the care of unusual and protracted cases. Seconded by Dr. James Grassick, and unanimously carried.

SURGEON'S MAXIMUM FEE SCHEDULE

Adopted By the North Dakota Workmen's
Compensation Bureau

Physicians' bills can not be honored until reports of accidents are received from the employer, the workman and the physician. When all reports are at hand, and the workman has accepted compensation, payment for medical and surgical aid, in accordance with this schedule, will be made promptly. Bills should be rendered promptly, on reverse side of this schedule.

These fees will apply only to injuries sustained on or after October 1, 1919.

Bills must be itemized, showing the date of each visit, dressing, or operation, and charge for each.

Fees covering daily dressings shall not be paid unless the nature and extent of the injury as shown by the proof on file clearly indicate the necessity for same.

This fee schedule includes all dressings, unless the case shows that an excessive amount of material had to be used. In that case it will be paid for at cost.

Medical appliances are not provided.
Medicines: Bill must be accompanied by a copy of the prescription for checking purposes.
First visit to place of injury, including dressing not otherwise specified.....Day \$3.00; Night \$ 4.50
(These charges will not be allowed in flat fee cases.)

First office visit, including report and dressings..	3.00
Subsequent visits at office or hospital, including dressing	1.50
Subsequent visits at home, including dressings..	2.50
Mileage beyond corporate limits of city (one-way mileage):	
Day (added to visit).....	.75
Night (added to visit).....	1.00
(Day meaning 7:00 a. m. to 9:00 p. m.)	
Assistant to surgeon at major operation.....	10.00
Assistant to surgeon at minor operation.....	5.00
Anesthetic, administering general, by a qualified anesthetist only	5.00
Anesthetic, administering general, major operation, by a qualified anesthetist only.....	10.00
(Local anesthesia to be considered part of the operation.)	
Consultation when authorized by the Commission	5.00
X-ray (two exposures when required):	
Arms, hands, legs or feet.....	5.00
Pelvis, hip or shoulder.....	7.50
Spine, or head.....	10.00
Stereos, when ordered, double price.	
(X-ray plates, films or prints to be paid for must be delivered to the Workmen's Compensation Bureau. Repetition of a large number of plates will not be considered necessary, nor of normal side for comparison.)	
Operations, minor, such as suturing ordinary cuts, lacerations, etc., total.....	5.00

FRACTURES

(Flat fee; including reduction and subsequent treatment)

In a case where multiple fractures occur, the fee shall be the major plus an additional 50 per cent of the fee prescribed for each of the others as herein classified.

In a flat fee case that is transferred to another surgeon, one fee only will be paid, proportioned at the discretion of the Commission.

Femur	\$100.00
Patella	50.00
Clavicle	35.00
Radius and ulna (shaft, not Colles').....	60.00
Radius or ulna or Colles'	35.00
Humerus	50.00
Finger	15.00
Toe	10.00
Carpal bones	35.00
Metacarpals	15.00
Pelvis	70.00
Tibia (shaft)	50.00
Fibula (shaft)	25.00
Tibia and fibula	75.00
Pott's	70.00
Tibia, internal malleolus.....	35.00
Scapula	40.00
Maxillary, inferior (not including dental).....	25.00
Nasal bones	10.00
Ribs, single or multiple.....	10.00
Foot (tarsal bones).....	35.00
Metatarsals	20.00

Fractures, Compound: An additional charge of 30 per cent may be added in cases of infected compound fractures.

Unoperated Complicated Fractures in which union is not taking place within ninety days, an additional charge may be allowed at the discretion of the Commission.

Open Bone Work, such as plating, wiring, grafting, curetting, etc., will not be paid for unless first taken up with and authorized by the Commission.

DISLOCATIONS

(Flat fee; including reduction and subsequent treatment)

In a case of more than one dislocation, the fee shall be the major one plus an additional 50 per cent of the fee prescribed for each of the others as herein classified.

Hip	\$ 45.00
Wrist	15.00
Finger or toe.....	5.00
Lower jaw	10.00
Shoulder	25.00
Elbow	25.00
Ankle	25.00
Knee	25.00

AMPUTATIONS

(Flat fee; amputation and subsequent treatment)
In a case of more than one amputation, the fee shall be the major one plus an additional 50 per cent of the fee prescribed for each of the others as herein classified.

Thigh, leg, ankle or foot.....	\$ 65.00
Arm, forearm or hand.....	50.00
Finger or toe.....	25.00
Arm disarticulation at shoulder joint.....	100.00
Hip disarticulation	150.00

MISCELLANEOUS

Cuts, contusions, etc., of other members will be considered a part of the major injury and not considered separately. Post-operative work to be paid for must be taken up with the Commission and fee decided prior to operation.

Ruptured urethra, requiring drainage by surgical operation, including subsequent treatment	\$75.00
Hernia, radical operation, including subsequent treatment	75.00
Double hernia	110.00
Operation requiring repair of abdominal viscera, including subsequent treatment.....	125.00
In case of major injury where the injured person is transferred to another locality for hospital treatment, the physician rendering first aid may present his account for a fee of.....	5.00
Iridectomy, including subsequent treatment...	75.00
Enucleation of eye and subsequent treatment...	50.00
Decompression operation and subsequent treatment	100.00
Removal of steel from eye by giant magnet and all subsequent treatment.....	75.00
Failure to remove, requiring other operation, 50 per cent.	
Laminectomy and subsequent treatment.....	100.00
Special nurse fee (for three days only; to continue longer must secure consent of the Commission) per day.....	5.00
Removal of foreign body embedded in cornea....	5.00

Removal of foreign bodies embedded in eye, curetting corneal ulcers, treating suppurating ears, etc., will be done by eye and ear specialists when possible.

A proportionate fee will be fixed by the Commission in any case mentioned in the schedule which terminates fatally within seven days after accident.

For operation or unusual treatment not herein specified, a proportional fee on the above basis will be allowed at the discretion of the Commission.

BILLS

The law requires that separate bills be presented by each surgeon, assistant, anesthetic, consultant, hospital or special nurse, and the records in the office of the Commission must show that payment was made to the party who rendered the service.

Bills for a second course of treatment for the original accident will not be considered unless necessity for such treatment is first taken up with and authorized by the Commission.

REPORT OF AUDITING COMMITTEE

Dr. F. R. Smyth, Bismarck, Chairman, reported that the report of the Treasurer was correct.

Dr. James Grassick, Grand Forks, moved that the report be accepted. Seconded by Dr. E. P. Quain, Bismarck, and carried.

COMMITTEE ON CANCER

Dr. Jas. P. Aylen, Fargo, reported that the Committee on Cancer did not know they existed until on looking over the program they saw their names; consequently there was no report to make. He thought very little progress had been made since the former report and did not know that they could definitely say that radium had any different status from that of three years ago.

Dr. E. P. Quain, Bismarck, thought it was rather an unfortunate circumstance The can-

cer problem was almost as far from solution as ever. More people died from cancer in the United States during the war than there were soldiers killed in the war. It was one of the principal causes of death, but the program had nothing on cancer. Such a big question should be considered; perhaps they could not have added much to the subject, but they could have made an attempt if they had known beforehand. He suggested that the committees be reminded within a reasonable time before the meeting as to their duties. A man might get a notice that he was a member of a committee, but it was apt to get sidetracked, and it was a good thing to remind him that this committee work was important.

The Secretary expressed himself as willing to remind the members of the different committees of their appointment several weeks before the Annual Meeting.

PUBLICATION OF PROCEEDINGS

Dr. Paul H. Burton, Fargo, moved that THE JOURNAL-LANCET be adopted as the official organ of publication for the ensuing year. Seconded by Dr. G. M. Williamson, Grand Forks, and carried.

The Secretary introduced the subject of the greatly increased cost of printing and paper, and stated that the printing for the Association had been done at a loss for several years. South Dakota at its recent meeting had voted to double what they had paid for THE JOURNAL-LANCET, doing this voluntarily because they thought the JOURNAL deserved it, on account of the high cost of work and materials. They are to pay THE JOURNAL-LANCET \$2.00, instead of \$1.00 as heretofore.

Dr. H. E. French, Grand Forks, moved that the North Dakota State Medical Association pay THE JOURNAL-LANCET \$2.00, instead of \$1.00 as heretofore. Seconded by Dr. Paul H. Burton, and carried.

Dr. E. P. Quain, Bismarck, called attention to the fact that the allowance to the local societies that entertained the State Medical Association was only \$75.00 each year for expenses, but everyone knew that this did not come anywhere near the amount expended. He moved that this amount be doubled and that \$150.00 be allowed the local society each year. Seconded by Dr. G. M. Williamson and Dr. H. H. Healy, Grand Forks, and carried.

Dr. James P. Aylen moved to abolish the lia-

bility insurance feature of the Association. He thought most of the men carried their own insurance, and it was unnecessary to spend money each year that did not bring much return.

Dr. G. M. Williamson agreed with Dr. Aylen that this would be a good plan, but it could not be done this year on account of the By-Laws, which provided that notice of an amendment must be given at a preceding meeting. He thought it would be well for Dr. Aylen to give notice that at the next annual meeting he would offer such an amendment.

Dr. Aylen thereupon gave notice that at the next annual meeting he would offer an amendment providing for the abolishment of the liability insurance feature.

Dr. Quain thought each constituent society should be notified of this proposed step, that they could come prepared.

Dr. Paul H. Burton, Fargo, moved that a committee be appointed by the President to take this matter up so that it could be put in concrete form at the next meeting.

Dr. G. M. Williamson called attention to the fact that the Constitution provided for a referendum vote (Article XI). This would bring the matter before everyone, and they would know how the Association stood on the question.

Dr. Aylen moved that a referendum be taken on the question and a committee be appointed to investigate the matter and report to the President by January 1, 1921. Seconded by Dr. G. M. Williamson, and unanimously carried.

Dr. G. J. Gislason called attention to that portion of the By-Laws relating to the Nominating Committee, and said that this was not provided in component societies, where nominations could be made informally from the floor. In his opinion these sections should be changed so that the nominations could be made by informal ballot and the Nominating Committee be done away with.

SELECTION OF MEETING-PLACE

Dr. Paul H. Burton, Fargo, said that consensus of the members was that they would like to meet in Fargo in 1921 and that Cass County would be glad to entertain the Association.

Dr. Fred Ewing, Kenmare, moved that the Association accept the invitation. Seconded by Dr. J. P. Aylen, and carried, and Fargo was declared the official meeting-place for next year.

Dr. G. M. Williamson, Grand Forks, moved that the time of the meeting be left to the Cass

County Medical Society. Seconded by Dr. G. J. Gislason, and carried.

REPORT OF COUNCILOR

The Secretary presented the following report from the Sheyenne Valley Medical Association: *To the House of Delegates of the North Dakota State Medical Association:*

As Councilor of the Sheyenne Valley District I make the following report:

The doctors of Barnes and Griggs counties are eligible to membership in this Society; there are twenty-three practicing physicians in this territory, of whom twenty-one are members.

Our members are all of the regular school, and there are no illegal practitioners within our District.

We have lost two members, one by non-payment of dues and the other, Dr. Caldwell, of Wimbledon, by removal from the state.

We have added one new member in the person of Dr. Irvine, who is located in Fingal.

Dr. A. C. Macdonald, formerly of Fingal, after his service in the World War, has re-located in our District, at Valley City.

The officers of our Society are the following: President, Dr. R. D. Benson; Vice President, Dr. C. E. Spicer; Secretary-Treasurer, Dr. S. A. Zimmerman.

All of which is respectfully submitted.

F. L. WICKS, M. D.,
Councilor.

Dr. Jas. P. Aylen, Fargo, moved that the report be accepted as read. Seconded by Dr. G. M. Williamson, and carried.

UNFINISHED BUSINESS

Dr. H. E. French, Grand Forks, presented the following resolution:

WHEREAS, Educational, social and economic conditions in the world today make it right and necessary for the state to assume an increasingly larger responsibility for medical education; and,

WHEREAS, The School of Medicine of the University of North Dakota has until this time by efficient work been able to accomplish a splendid service and to maintain a favorable rating with the Council on Medical Education of the American Medical Association, and a favorable standing with larger schools where its students must go for their clinical training; and,

WHEREAS, Increasing numbers of students and inadequate financial support on the one hand, and increasing standards of excellency on the other, are now interfering with the efficiency of the work, and seriously endangering the standing of the school before the various outside agencies whose favorable opinion is necessary for its existence; therefore be it

RESOLVED by the House of Delegates of the North Dakota State Medical Association that we commend the work of the School of Medicine to the authorities of the State, and urge that better provision be made for its maintenance, to the end that both its efficiency and its standing remain high.

Dr. Fred Ewing, Kenmare, moved that the resolution be adopted. Seconded by Dr. G. J. Gislason, and carried.

Dr. G. J. Gislason, Grand Forks, moved that a vote of thanks be extended to the members of the profession of Minot for their splendid hospitality and entertainment during the meeting. Seconded by several members and unanimously carried.

On motion the House of Delegates adjourned *sine die*.

H. J. ROWE, M. D.,
Secretary.

PROCEEDINGS OF THE SCIENTIFIC SESSION

FIRST DAY, TUESDAY, JUNE 15, 1920

The meeting was called to order by Dr. W. P. Baldwin, Fargo, at 10:15 A. M., and was opened by prayer by the Rev. Fr. Tengley, of Minot.

The president of the Minot Association made an address of welcome, which was responded to by Dr. Charles MacLachlan, of New Rockford.

Dr. Blake Lancaster, Wahpeton, presented a paper entitled, "Laboratory Methods for the General Practitioner." The paper was discussed by Dr. W. P. Baldwin, Fargo; Dr. Fred Ewing, Kenmare; Dr. A. G. Long, Grand Forks; Dr. H. H. Healy, Grand Forks; and, in closing, by Dr. Lancaster.

Dr. F. A. Brugman, Minot, read a paper on "Etiology of Chronic Headaches," upon which there was no discussion.

Dr. Henry A. Beaudoux, Minneapolis, who was to have presented a paper on "Head Injuries," was unable to be present, and his paper was passed.

The Scientific Session adjourned at 11:30 to reconvene at 2 P. M.

AFTERNOON SESSION 2:30 P. M.

The meeting was called to order by the President, Dr. W. P. Baldwin, Fargo, at 2:30 P. M.

Dr. E. H. Ruediger, Bismarck, read a paper entitled, "Discrepancies in the Wassermann Reaction." The paper was discussed by Dr. F. I. Darrow, Fargo; Dr. H. O. Altnow, Mandan, N. D.; and, in closing, by Dr. Ruediger.

Dr. Gordon S. New, Rochester, Minn., discussed the "Treatment of Tumor of Head and Neck with Radium," and gave a lantern-slide demonstration. This was discussed by Dr. H. H. Healy, Grand Forks, and Dr. E. P. Quain, Bismarck.

Dr. W. H. Bodensstab, Bismarck, presented a paper on "Diagnosis and Prognosis." The paper was discussed by Dr. G. M. Williamson, Grand

Forks; Dr. Jas. P. Aylen, Fargo; and, in closing, by Dr. Bodenstab.

Dr. J. O. Arnson, Bismarck, read a paper entitled, "Clinical Aspects of Pulmonary Tuberculosis." No discussion.

Dr. F. W. MacManus, Bashaw, Alberta, was unable to be present at this session, and his paper was read by title, "Appendicitis in Children."

This closed the Scientific Session for the first day, and the members of the Association and their friends were taken for an auto ride through the Minot Parks and Zoo. At seven o'clock a dinner dance was given for the Doctors and their wives and friends in the rooms of the Association of Commerce. A musical program was furnished during the dinner and immediately afterward appropriate speeches were made by various members of the Association. Following this the floor was cleared for dancing, and a very enjoyable time was had.

MORNING SESSION, WEDNESDAY, JUNE 16, 1920

The meeting was called to order by the President, Dr. W. P. Baldwin, Fargo, at 10:30 A. M.

Mr. R. H. Bosard, Minot, read a paper entitled "A Few Words on Malpractice Suits." No discussion.

Dr. G. M. Williamson, Grand Forks, presented a paper entitled "Clinical Report of a Case of Hemorrhage of the Pons Varolii and Medulla Oblongata" (with lantern slides). The paper was discussed by Dr. Fred Ewing, Kenmare, and Dr. H. E. French, who gave the histopathological findings.

Dr. Charles Lyman Greene, St. Paul, Minn., read a paper on "The Rational Interpretation of Murmurs of Cardiac Rythm." The paper was discussed by Dr. E. A. Pray, Valley City; Dr. W. H. Bodenstab, Bismarck, and, in closing, by Dr. Greene.

Dr. W. F. Sihler, Devils Lake, presented a paper on "Varicocele of the Broad Ligament." No discussion.

This closed the Scientific Program, and on motion the meeting adjourned.

H. J. ROWE, M. D.,
Secretary.

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 Ewing, John.....Kenmare
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 Fisher, Stephen.....New Salem
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 Kirkham, J. H.....Langdon
 Kjelland, A. A.....Hatton
 Knapp, H. G.....Minot
 Knudson, K. O.....Glenburn
 Knutson, O. A.....Buxton
 Kolb, F. K.....Granville
 Labbitt, L. H.....Enderlin
 Lamont, J. G.....Dunseith
 Lancaster, Blake ...Wahpeton
 Lancaster, W. M.....Wahpeton
 Landry, L. H.....Walhalla
 Lang, A. A. J.....Sanborn
 Larabee, S. G.....Mandan
 LaRose, V. J.....Bismarck
 Law, H. W. F.....Grand Forks
 Law, I. M.....Hannah
 Leatherwood, T. F.....Minot
 Leavitt, R. H.....Carson
 LeBien, E. A.....McHenry
 Lemieux, DarieDunseith
 Lewis, T. H.....Sutton
 Limberg, A. M.....Fargo

Lipp, G. R.....Bismarck
 Little, R. C.....Mayville
 Lodge, F. B.....Steele
 Lohrbauer, Ejner.....Lakota
 Lommen, C. E.....Fordville
 Long, W. H.....Dickinson
 Longstreth, W. E.....Kensal
 Lyle, W. D.....Havana
 MacDonald, A. C....Valley City
 MacDonald, A. W....Valley City
 MacGregor, Murdock....Fargo
 MacKenzie, J. Ross...Carrington
 MacKenzie, J. Roy, New Rockford
 MacLachlan, Chas..New Rockford
 MacLachlan, F. M....Bismarck
 MacManus, F. W.....
Bashaw, Alberta
 McCannel, Archie D.....Minot
 McCannel, A. J.....Minot
 McClusky, O. W....Carrington
 McDonnell, R. H....Hankinson
 McGurren, C. J.....Devils Lake
 McIntosh, G. J.....Devils Lake
 McKay, A. R.....Bottineau
 McLean, H.Crosby
 McLean, R. M.....Gilby
 McMurtry, W. C.....Lisbon
 McQueen, W. W.....Langdon
 Maercklein, C. J.....Beach
 Maercklein, F. W.....Oakes
 Marsden, C. S.....Grand Forks
 Martin, Thomas P....Mayville
 Matthaei, D. W.....Fessenden
 Meadows, R. W.....Sheyenne
 Melzer, S. W.....Woodworth
 Miller, H. W.....Casselton
 Miller, J. P.....Grand Forks
 Moeller, ThorDevils Lake
 Moffatt, GeorgeCrosby
 Monteith, GeorgeHazelton
 Moore, J. J.....Grand Forks
 Moore, W. H.....Luverne
 Moreland, J. W.....Maxbass
 Morris, A. C.....Fargo
 Movius, A. H.....Jamestown
 Movius, H. J.....Edgeley
 Mulligan, T.....Grand Forks
 Murray, K. M.....Scranton
 Munier, H. J.....Oakes
 Museum, H. B.....Beach
 Nachtwey, A. P.....Dickinson
 Nelson, W. P.....Knox
 Nesse, S. A.....Nome
 Nestos, P. A.....Minot
 Newlove, J. T.....Minot
 Newlove, J. W.....Minot
 Nichols, A. A.....Fargo
 Nicholson, A. S.....Williston
 Nicholson, E. G.....Lawton
 Nichols, Wm. C.....Fargo
 Nickerson, B. S.....Mandan
 Nolte, W. C.....Jamestown
 Nutting, W. W.....Bowman
 O'Brien, T.....Wahpeton
 O'Keefe, Henry.....Grand Forks
 Oftedahl, Arne.....Fargo
 Oftedal, AxelFargo

Oftedal, Sverre..... Fargo
 Olson, C. T..... Lidgerwood
 Ostrander, A. J..... Enderlin
 Owen, W. R..... Manfred
 Owenson, H. A..... Grace City
 Patterson, T. C..... Lisbon
 Paulson, A. J.

Thief River Falls, Minn.

Pence, J. R..... Minot
 Pence, R. W..... Minot
 Perkins, Geo. A..... Dickinson
 Peterson, O. T..... Northwood
 Pierson, C. M..... Ambrose
 Plane, J. F..... Edgeley
 Plassman, W. F..... Golden Valley
 Platou, L. S..... Fargo
 Platou, L. S..... Litchville
 Plourde, W. A..... Willow City
 Porter, W. H..... Calvin
 Pray, E. A..... Valley City
 Pryse, T. S..... Dawson
 Quain, Fannie D..... Bismarck
 Quain, E. P..... Bismarck
 Ramstad, N. O..... Bismarck
 Rankin, J. A..... Carrington
 Ransom, E. M..... Minot
 Ray, R. H..... Garrison
 Ribble, George B..... La Moure
 Rice, P. F..... Solen
 Rindlaub, Elizabeth P..... Fargo
 Rindlaub, John H..... Fargo
 Rindlaub, M. P..... Fargo
 Ringo, G. R..... Minot
 Ripperton, Sherman... Wyndmere
 Ritchie, C. K..... Velva
 Roan, M. W..... Bismarck
 Roberts, F. J..... Cando
 Robinson, C. C..... Bismarck
 Rogers, Joseph..... Alexander
 Rollefson, C. O..... Ambrose
 Rothem, T. P..... Fargo
 Rowe, H. J..... Lisbon
 Ruediger, E. H..... Bismarck
 Ryan, D. E..... Hankinson
 Sand, S. O..... Fargo

Sarchett, G. A..... New England
 Sasse, E. G..... Lidgerwood
 Savre, M. T..... Northwood
 Schierbaum, A. F. E..... Hebron
 Schipfer, L. A..... Bismarck
 Schneider, J. E..... Bowman
 Schumacher, William... Hettinger
 Scott, R. A..... Crystal
 Shoregge, C. W..... Bismarck
 Shortridge, W. R..... Flasher
 Sihler, W. F..... Devils Lake
 Simon, John..... Kintyre
 Skelsey, A. W..... Fargo
 Skovholt, H. T..... Williston
 Smith, C. C..... Stanton
 Smith, Clinton..... Devils Lake
 Smith, J. A..... Noonan
 Smith, J. C..... Thompson
 Smith, Le Roy G..... Medina
 Smith, Oscar M..... Killdeer
 Smyth, F. R..... Bismarck
 Somers, A. J..... Portal
 Sorenson, A. R..... Rugby
 Spannare, C. I..... Milton
 Spear, A. E..... Belfield
 Spicer, C. E..... Valley City
 Spielman, G. H..... Mandan
 Stackhouse, C. E..... Bismarck
 Steele, D. C..... Fairmount
 Steeves, E. O..... Rugby
 Stickney, V. H..... Dickinson
 Stone, E. C..... Balfour
 Strauss, F. B..... Bismarck
 Stromberg, G. E..... Langdon
 Stucke, Agnes G..... Garrison
 Stucke, E. C..... Garrison
 Sturgeon, F. H..... Kulm
 Suter, J. C..... Grafton
 Swartout, E. F..... Sykeston
 Swenson, A. W..... Bisbee
 Taylor, J. D..... Grand Forks
 Thelen, W. P..... Wilton
 Thompson, A. Y..... Larimore
 Thompson, C. R..... Oberon
 Thompson, R. C..... Wilton

Timm, J. F..... Makoti
 Towey, J. W..... Langdon
 Trainor, M. E..... Williston
 Tronnes, N. Fargo
 Truscott, J. R..... Binford
 Tyrell, J. B..... Underwood
 Van de Erve, H..... Carrington
 Van Houten, J..... Valley City
 Verrett, B. D..... Rolla
 Vigeland, J. G..... Brinsmade
 Vinje, Syver..... Hillsboro
 Voss, Carl..... Hettinger
 Waas, Chas..... Neche
 Wadel, K. A..... Portland
 Wagar, W. D..... Michigan
 Waldren, H. M..... Drayton
 Wands, E. E..... Lisbon
 Wanner, W. B..... Wimbledon
 Warnshuis, G. H..... Marmarth
 Weed, F. E..... Park River
 Weible, R. E..... Fargo
 Welch, W. H..... Larimore
 Welker, A. J..... Max
 Westley, M. D..... Cooperstown
 Westeen, A. A..... Grand Forks
 Weyrens, J. P..... Sheldon
 Wheeler, H. M..... Grand Forks
 Wheelon, F. E..... Minot
 Whitson, J. S..... Streeter
 Whittemore, Arthur A. Bowman
 Wicklund, C. A..... Wildrose
 Wicks, F. L..... Valley City
 Wiig, I. C. J..... Wahpeton
 Williamson, Geo. M. Grand Forks
 Wilson, W. C..... Grand Forks
 Winchester, H. E..... Hazelton
 Wink, Helen K..... Jamestown
 Witherstine, W. H..... Grand Forks
 Wolverton, W. C..... Linton
 Wood, W. W..... Jamestown
 Woutat, H. G..... Grand Forks
 Wylie, A. R. T..... Grafton
 Yeomans, T. N..... Minot
 Zimmerman, S. A..... Valley City



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AUGUST 1, 1920

DOCTOR BURTON J. MERRILL

One of Minnesota's well-known physicians died, on July 16th, at his home in Stillwater of a chronic myocarditis.

Dr. Burton J. Merrill was born in Palmyra, Iowa, May 3, 1856, and came to Stillwater in 1881. He had been in active practice there for the last thirty-nine years. He was very much interested in the welfare of Washington County, and was at one time county coroner, city physician, and health commissioner, and up to a few years ago was the attending physician and surgeon at the Minnesota State Prison. He was also for many years (with the interruption of a few years) a member of the Minnesota State Board of Health, and at the meetings of this Board we perhaps saw him at his best, for he was then away from his daily grind and interested only in matters pertaining to the public health, not only of Minnesota, but of the country at large. He was quiet, very thoughtful, and very sound in judgment, and his advice was of great help to the Board, as he was cautious, in a sense, and in that way many times prevented any impulsive action by the Board.

During the administration of one governor, Dr. Merrill was to be reappointed on the Board of Health, but with his usual magnanimity he declined the offer because he felt the governor should make his own appointment. He had no personal motive in the matter except that of unselfishness.

Those who knew Dr. Merrill will remember that he was round-faced, with a rosy complexion, and full of gentle humor. He loved his friends, and he was adored by his patients in Stillwater and the surrounding country, probably for his quiet, attentive manner, his care, and his interest in the welfare of his patients. When he died, Stillwater lost a good man and a good citizen, as well as a real physician.

He frequently went into Wisconsin for relaxation, and his hobby was fishing. He enjoyed the quiet and the lack of excitement that accompany the gentle art of the angler, and he further enjoyed the out-of-door life, which he knew so well and which he loved, perhaps, better than any other diversion.

THE SIMPLIFIED FUNERAL

The funeral service for the late Dr. Burton J. Merrill, of Stillwater, which took place at his home on Sunday, July 18th, was an illustration of what is being done at the present time in the way of a simple service, without display or ostentation; and the great improvement in the conduction of the ceremony was very marked.

It seems to be quite the thing now to have the minister read a few verses from the Bible, accompanied by an appropriate poem and a short but carefully prepared prayer, the service lasting from ten to twelve minutes. This form of service eliminates the soul-tearing music of the soloist, and the long and needless harangue in the form of a sermon; and in their stead we have the quick movement of the ceremonies and the restoration of the house to normal immediately afterwards. The undertaker in charge of such affairs is always conspicuous in his efforts to see that things are carried out properly, promptly, and without any more inconvenience than is absolutely necessary. This simplified service is adaptable to any home in a town of moderate size.

The trend is toward the further simplifying of the funeral service, particularly in the large cities, by the use of the cemetery chapel. In anticipation of this, the body is taken to the undertaking parlors as soon as possible after death, and there is properly and scientifically prepared for burial. It remains there until the day, or the hour, of the funeral, and then is sent out to the chapel where the services are to be held. This does away with the disruption of the household and the curious crowds at a church funeral, and leaves it only for a few special friends, who are really interested in watching the departure of

the friend or relative, to attend. To carry out the simplicity of this service, the chapel is equipped with a disappearing table, and as the brief ceremony ceases the table disappears into a room below, where the coffin is removed, and the marble slab reappears. To still further simplify such a method, the remains are promptly cremated. All this means a simpler and a more rational ceremony, and a more sanitary disposal of the dead.

Of course, these new forms are not acceptable to all, and many like the ceremony as carried out in a church or in a large house filled with the relatives and friends, besides a certain class of people who attend all the funerals they can,—the curious. Then, too, there are many who have not adopted the scientific disposal of the dead by cremation. They look upon it as something horrible. Just why they fear this and recall the slow disintegration of the flesh is a marvel to the medical man. Cremation has many points of interest in its favor: first, the hygienic feature; secondly, the cleanliness and dispatch of the inanimate subject. Then, too, in case of the disorganization of a cemetery, there are no disintegrated coffins or disorganized and shapeless remnants of bodies to be removed. Incidentally, it is less expensive than the average funeral service, and it does not require elaborate caskets for the dead. This should appeal to the people of moderate means and also to the poorer classes. But, until they become educated to the advantages of cremation, the old-style sorrowful and tedious funeral service will be carried out.

We pay our respects to the man who dies, not necessarily by our presence at his funeral, but by our kindly thoughts of his life,—what he did, who he was, what good he accomplished, and the friendship existing between him and us. When a doctor dies, it would almost seem fitting to have three or four of his friends give a three-minute talk concerning his life and his work. This is, of course, contrary to the custom, but it might be made a lasting memorial, and the words might be worthy of preservation, and would be more or less historical and biographical.

CORRESPONDENCE

THE TREATMENT OF LEPROSY

TO THE EDITOR:

I was very much interested in your comments, in *THE JOURNAL-LANCET* of July 1st, on leprosy.

While I was on duty at the Post Hospital, Scofield Barracks, Hawaiian Islands, the Staff visited the leper hospital on the outskirts of Honolulu. At the time there were about one hundred fifty patients in this hospital, a great many of whom were children. Some of the patients were in serious condition, and many appeared normal to the casual observer. The treatment given these cases was chaulmoogra oil. This was given in capsules, by mouth, three times a day, and also by injections into the buttocks, the frequency of which I have forgotten. Iron tonics were also given. The medical director in charge showed a number of cases which were very much improved; and he stated that frequently they are able to discharge cases which were considered "cured." The Government requires a patient to be kept at this hospital at least six months. If no improvement takes place, he is sent to the Leper Colony on Molokai. If improvement has taken place, cases are held at this hospital for further treatment.

I want to commend the work done at this hospital, as the patients are happy, contented, and well cared for.

Very truly yours,

J. F. AVERY, M. D.,
F. A. C. P.

Minneapolis, July 21, 1920.

REPORTS OF SOCIETIES

THE AMERICAN RÖNTGEN RAY SOCIETY

The annual meeting of the American Röntgen Ray Society will be held at the Hotel Curtis September 15, 16 and 17, 1920.

Among the guests of the Society who will present articles of interest will be Dr. W. T. Bovie, who will present a paper upon "A Rational Basis for Sensitometry." Dr. Dallas B. Phemister, of Chicago, will speak on "Studies on the Reduction of Bone Density." Dr. Robert Knox, of London, England, a well-known radiologist, will give an address. Dr. Walter C. Alvares, of the University of California, will give the Caldwell Lecture on "Peristalsis in Health and Disease."

Other papers of special interest will be the following:

Dr. W. H. Stewart, of New York, "A Revised Estimate of the Value of Pneumoperitoneum."

Dr. G. E. Pfahler, of Philadelphia, "New

Röntgenographic Technic for the Study of the Thyroid."

Dr. Kennon Dunham, of Cincinnati, "A Review of X-ray Chest-Examinations."

Dr. Preston M. Hickey, of Detroit, "Mastoids."

Dr. W. W. Watkins, "Syphilitic-Tuberculous Symbiosis in the Lungs, Reviewing the Characteristics of Each Infection and of the Double Infection."

The preliminary session will be held at Rochester on Tuesday, September 14, and members and guests will come from Rochester to Minneapolis by special train on the evening of the 14th.

An attendance of between five and six hundred is expected.

NEWS ITEMS

Dr. J. G. W. Havens, of Owatonna, has joined the Austin Clinic.

Dr. E. C. Kading has moved from Bozeman, Mont., to Belgrade, Mont.

Dr. W. F. Hamilton, of Havre, Mont., is doing postgraduate work in Boston.

Dr. Paul Reilly, of Stillwater, was married last month to Miss Louise Vandegrift, also of Stillwater.

Dr. J. C. Hagan, of Omaha, Neb., has become associated with Dr. H. H. Sherwood, of Humboldt, S. D.

Dr. C. C. Allen, of Austin, has gone to Europe for a vacation, and will attend clinics in London during his absence.

Dr. John W. Lee, of Minneapolis, was married on June 21 to Miss Marie Reinhardt, formerly of New Brunswick, N. J.

Dr. H. C. Parsons, of Watertown, S. D., has returned from New York City, where he has been doing postgraduate work.

Dr. O. J. Seifert, of New Ulm, has been appointed medical examiner in that district for the Bureau of War Risk Insurance and Compensation.

The Hospital of the Medical School of the University of Minnesota has set aside fifty beds for pay-patients at the nominal price of \$15 a week.

Dr. Jessie Carlton, superintendent of Ambalah Hospital of India, a Presbyterian missionary hospital, is visiting friends in Sioux Falls, S. D.

She gets a vacation once in ten years. She is a fortunate doctor.

The Minnesota State Board of Health has begun a campaign for the extermination of rats, in order to prevent the possibility of the bubonic plague in the state.

Dr. H. L. Crane, formerly on the staff of the Homestake Mining Company Hospital at Lead, S. D., is now in charge of a mining company's hospital at Cerro de Panco, Peru.

Dr. Albert C. McGhee, physician of the Leech Lake Indians, has been transferred from that position to Keshena, Wis., as physician to the Government camp where timber cutting is done by the Government.

The Cass County (N. D.) Medical Society has invited the Grand Forks (N. D.) Society to meet with them in September at Fargo, and the invitation has been accepted. Such a joint meeting should be an interesting one.

The Tri-State District Medical Society has extended to the members of the Southern Minnesota Medical Association an invitation to be present at their Assembly, which will be held at Waterloo, Iowa, October 4, 5, 6, and 7.

Dr. George M. McIntyre, of St. Peter, died last month at the age of 67. Dr. McIntyre was a graduate of the Minnesota Hospital College, class of '83, and of the Albany Medical College, class of '91. He had practiced in Minnesota thirty-seven years.

The Montana Public Health Association held its annual meeting in Helena last month, and elected the following officers for the current year: President, Dr. H. T. Rhoades, Choteau; vice-president, Dr. G. A. Lewis, Roundup; secretary, Dr. J. J. Sippy, Helena.

Dr. Burton J. Merrill, of Stillwater, died last month at the age of 64. Dr. Merrill was a graduate of Bellevue (N. Y.) in 1891, and had practiced in Minnesota thirty-eight years, most of the time in Stillwater. He was highly respected by the people of that city and vicinity.

Dr. Van H. Wilcox, of Minneapolis, died last month at the age of 48. Dr. Wilcox was a graduate of the University of Minnesota Medical School, class of '02, and had practiced in Minneapolis for the past fifteen years. He was a brother of Dr. M. Russell Wilcox, also of Minneapolis.

Drs. H. J. Branton and C. J. Ehrenberg, 1918 graduates of the Medical School of the Univer-

sity of Minnesota, who recently completed a year's internship at the Minneapolis General Hospital, have become associated with Dr. B. J. Branton, of Willmar, in the management of the Willmar Hospital.

The Sivertsen Clinic, of Minneapolis, has been formed and has moved into its new building on Twenty-fourth Ave. So. and Sixth St. The Clinic is composed of Dr. Ivar Sivertsen, Dr. F. J. Souba, Dr. Mathias Sund, Dr. Andrew Sivertsen, Dr. R. C. Logeheil, Dr. R. I. Dorge, and Dr. G. M. Lisherness.

The Wabasha County Medical Society held its fifty-second annual meeting at Zumbro Falls last month, with an attendance of thirty, including every physician in the county except three. The following officers were elected: President, Dr. W. B. Heagerty, Mazeppa; vice-president, Dr. H. E. Bowers, Lake City; secretary-treasurer, Dr. W. F. Wilson, Lake City. The next meeting will be held at Plainview.

Dr. F. O. Woodward and Dr. Carl C. Cowin, of Minneapolis, have joined the recently organized Clinic of Jamestown, N. D. This new Clinic is composed of the following physicians: Dr. A. H. Movius, Dr. W. W. Wood, Dr. W. A. Gerish; Dr. P. G. Artz, Dr. F. O. Woodward, and Dr. C. C. Cowin. Dr. Cowin has been associated for four years with Dr. W. B. Murray, of Minneapolis, in eye, ear, nose, and throat work; and Dr. Woodward has been associated for five years with Dr. Geo. Douglas Head, of Minneapolis, in internal medicine. Drs. Cowin and Woodward carry large strength to the new Clinic.

The forty-second annual meeting of the Medical Association of Montana was held at Helena last month, and is said to have been one of the best state association meetings ever held in any state. The program was above the average, the entertainment lavish and exceedingly enjoyable. The sentiment of the doctors is against State medicine and compulsory insurance and for the increase in the knowledge and ability of those who practice medicine, and in that way to eliminate the want of the people for chiropractors, osteopaths, and others who work upon the credulous sick. The following officers were elected: Dr. Creswell T. Pigot, Roundup, president; Dr. P. H. McCarthy, Butte, first vice-president; Dr. L. H. Fligman, Helena, second vice-president; Dr. H. J. MacGregor, Choteau, third vice-president; Dr. E. G. Balsam, Billings (re-elected), secretary-treasurer; Dr. J. M. Scanland, Warm Springs, alternate delegate; Dr. E. W. Spotts-

wood, the delegate holding over for another year. Billings was selected as the place for the next annual meeting.

The Stearns-Benton County Medical Society at its last meeting passed the following resolution: "Inasmuch as good roads are of vital necessity in order that the physician may properly care for his rural patients, and inasmuch as, under the present system of road construction and maintenance, the rural roads are frequently impassable, and it is impossible at times for the physician to make calls in the country, thereby frequently causing great suffering and even death through inability to secure medical aid in time; and inasmuch as it has been thoroughly demonstrated that it is impossible to maintain graveled roads in good condition under heavy traffic, and the proposed constitutional amendment known as the "Babcock Amendment" will remedy this condition by providing means for hard surfacing all the main traveled highways throughout the state, and at the same time provide for graveling all the less traveled roads leading to the main highways, *therefore* we, the physicians of Stearns and Benton Counties, in convention assembled, do hereby ask the voters as a means to assist the physicians of their respective communities to render more efficient aid to their patients, and thereby relieve suffering and conserve human life to vote and work for the passage of said amendment.

PHYSICIANS LICENSED TO PRACTICE IN SOUTH DAKOTA

AT THE JANUARY EXAMINATIONS
ON EXAMINATION

Burns, Dan D.....	Sioux City Col. of M.,	1906
Burman, G. E.....	Univ. of Nebraska,	1918
Case, T. J.....	Rush,	1889
Cramer, Lloyd L.....	Creighton,	1911
DeTuncq, A. E.....	Marquette,	1913
Drouin, W. G.....	Laval University,	1903
Duncan, Cecil E.....	Indiana,	1908
Eaton, Richard G.....	Harvard,	1896
Hannon, Leo J.....	Washington U.,	1919
Haug, L. A.....	N. W. U. Med. School,	1916
Johnson, Geo. E.....	Chicago Col. of M. & S.,	1918
Lunn, Jacob O.....	P. & S., Chicago,	1908
Matlock, W. L....	Natl. U. of Arts & Sci.,	1918
O'Toole, Tom F.....	Rush,	1919
Rice, D. B.....	U. of Louisville,	1909
Ricketts, Floyd B.....	Natl. U. of Arts & Sci.,	1915
Rogne, C. O.....	Rush,	1916

Sherwood, C. E. U. of Michigan, 1919
 Taylor, James R. . . . U. C. of M., Richmond, 1907
 Whitehead, E. H. St. U. of Iowa, 1904
 Whitehead, Herman J. . . . Iowa State U., 1897
 Whitney, Leroy D. . . . Tufts College M. S., 1915

BY RECIPROCITY

Haskell, A. I. U. of Minnesota, 1916
 Schwartz, Virgil J. . . . U. of Minnesota, 1919
 Jamieson, George V. Rush, 1913
 Newkamp, Hugo Bower U., Germany, 1898
 Wheelock, D. O. U. of Louisville, 1908

EQUIPMENT AND FIXTURES WANTED

I want to buy set of good second-hand eye, ear, nose and throat office furniture, equipment, and instruments. Describe fully with price, listing separately and collectively. Address 360, care of this office.

OFFICE POSITIONS WANTED

Two girls who have just graduated from the Hill Crest Hospital Nurses Training School desire positions in physicians' office. Can do routine laboratory work. Address 362, care of this office.

PRACTICE FOR SALE IN MINNESOTA

An unopposed village and county practice of over \$4,000 yearly, near Twin Cities. I am moving to another state. Collections, 99 per cent. Introduction. Price, \$500 cash, which includes office chairs and a few other articles. Surgeon can make more. Address 367.

HOSPITAL EQUIPMENT AND INSTRUMENTS FOR SALE

I offer for sale my hospital equipment and instruments—a very fine outfit, including ten hospital beds, six hospital dressers, a Type E Vulcan coil, x-ray tube and stand, irrigating stand and basin, reception room furnishings, operating table, steam and electric sterilizers, and instrument stands and cases, etc., all at a reasonable price, and as soon as possible. Address 368, care of this office.

WANTS TO PURCHASE A GOOD PRACTICE

A young surgeon, who owns a \$11,000 home in St. Paul, wishes to go to a moderate-sized country town with hospital or hospital opportunities in the Northwest. Will trade his home or buy practice. Address 369, care of this office.

LOCATION OR AFFILIATION WANTED

A young physician with considerable surgical experience, who has spent the past year since leaving war service in a surgical hospital, seeks an affiliation with a good man in the country or will buy a country practice. Address 350, care of this office.

PHYSICIAN WANTED

An unopposed location. Town, 550. Nearest doctor 14 miles east, 65 miles west, 75 miles south, 45 miles north. Country well settled. Best location open in the country. Nothing to buy. For full particulars write Sanish Drug Co., Sanish, N. D.

PRACTICE FOR SALE

Practice paying \$6,000 per year in a South Dakota village. No opposition. Practically 100 per cent collections. For particulars write to A. S. Lindsey, cashier of the People's Bank, Dixon, S. D.

LABORATORY TECHNICIAN DESIRES WORK

A technician with experience desires a position in a physician's office or in a clinic. Has had some experience in x-ray work and plate development. Best of references. Address 366, care of this office.

PHYSICIAN WANTED

Wanted, beginning in September or October, a third man in busy general practice, Scandinavian preferred. Registered in Minnesota. Small up-to-date town. Salary low to begin with, and promptly raised as you demonstrate your value. Please tell it all in your first letter. Address 361, care of this office.

MINNEAPOLIS OFFICES FOR RENT

Desirable offices for rent in a good location in Minneapolis for physicians, surgeons, and dentists at the corner of Franklin and Bloomington Aves. Address 371, care of this office, or telephone Geneva 4110.

SPECIAL TECHNICIAN FOR INTRAVENOUS WORK

A technician, whose specialty is intravenous work, offers her services, by the hour or case, to Twin City physicians. Has administered salvarsan over a thousand times. For information and terms, address 369, care of this office.

PRACTICE FOR SALE

Unopposed North Dakota \$6,000 practice. Good roads, good schools, new house with hot water heat, bath, shower, electric lights and big garage; large territory; only physician; main line Northern Pacific; railroad surgeon, transferrable. Will sell for price of property. Satisfactory terms, and will introduce new man. Going to specialize. Address 370, care of this office.

EYE, EAR, NOSE, AND THROAT SPECIALIST DESIRES LOCATION

An eye, ear, nose, and throat specialist, who is a graduate of an A-1 school, has been associated with a specialist of national reputation (now deceased), and has been in the army for two years, desires a location in the Northwest, preferably in a clinic. Address 363, care of this office.

The thought behind the tube— "the patient on the table"



Not "good enough" but the best from every standpoint—
alone assures that degree of "Catgut Safety" demanded when
the patient on the table is "ONE OF MY OWN FAMILY"
Only on this peculiarly personal basis is

"Van Horn" Catgut

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Johnson & Johnson

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NEW BRUNSWICK, N.J.



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Under the above named caption a new pocket magazine reached our table. It is a house organ; nevertheless it gives forth interesting music. It contains short, snappy editorials, interesting items of a medical trend, and a few articles of a page-length. All of this is extremely readable. A few items about the products of the publishers complete this interesting "pocket quarterly," which is issued by Messrs. Reed & Carnrick, of Jersey City, and sent free to all physicians who furnish their names to this old-established pharmaceutical house. It's worth while.

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A REVIEW OF THE NEW SURGICAL METHODS TAUGHT BY THE WORLD WAR: PRESIDENT'S ADDRESS*

By E. M. LARSON, M. D.,
GREAT FALLS, MONTANA

It is now slightly more than a year ago that we returned to our domestic professional duties filled with tales of adventure, disappointment, and experiences from our national duties during a period of reformation of the world as a whole and of its integral parts. During this time we had read and heard of many new methods, operative procedures, splints, and what not, so much so, that one believed that the principles and practice of surgery were undergoing such a change that we would have to do over that which it had taken years to attain. Yet soon after our return many of these new lessons were forgotten, or deemed impracticable because of limited facilities. As time wore on many of these advances,—both the new, and the old ones with new technic—were subjected to the usual careful after-study that follows widely advertised methods. Much has been said, pro and con, and even to this date the exact merits of these newer methods have not been fully determined. Though a sufficient number have been definitely established and exact indications laid down, it behooves us to look into them.

It is my purpose today, briefly, to review some of the newer teachings and methods that this great conflict has taught us. Their application to every-day surgery seems to depend on the individual's ambition rather than on the feasibility of their application, for many of the poor results are not due to the particular method or teaching,

but to our own limited knowledge in its application.

We will begin, naturally enough, with the consideration of treatment of wounds. The basis for this large amount of new work was largely due to the fact that it was the greater portion of the work to be done. The foundation for it was laid by the Inter-Allied Surgical Commission. They considered all wounds as either *contaminated* (containing clothing, hair, débris, etc.) or *infected*, the latter in varying degree and severity of type; and the object of all treatment should be,—

First, to prevent infection of contaminated wounds.

Second, to obtain sterilization of infected wounds.

Third, to suture when "clinical sterilization" had been obtained.

The term "clinical sterilization" was one coined by Carrel, and means that the number of organisms is so small and the virulence so reduced that the wound may be sutured and good healing obtained. To carry out these recommendations the treatment has been as follows:

First, primary suture.

Second, sterilization of infected wounds, obtained by the physiological or antiseptic method.

Third, excision of the wound and suturing.

Primary suturing is confined to small wounds, seen early (not later than eight hours), thoroughly opened and cleansed, and all contamina-

*Presented before the Medical Association of Montana, July 14, 1920.

tion removed. Primary dressing may be left in place ten days if there is no evidence of trouble. If this should occur the wound is opened wide, and sterilization instituted. Morrison of England strongly advocates this method in even more severe cases, including compound fractures, and he proceeds as follows: the wound is opened wide, and all débris, necrotic and devitalized tissue, foreign bodies, and spicula of bone are removed, bleeding is completely controlled, and the surfaces are painted with "Bip" (bismuth subnitrate—one part, iodoform two parts, paraffin q. s. to make a soft paste), and the wound sutured, and dressing applied. He emphasizes the fact that immobilization is very essential in all cases and he says that primary union is obtained in 90 per cent of moderately severe cases.

Sterilization of wounds has to do mainly with the late cases showing free purulent discharge, pus pockets, necrotic tissue, and foreign bodies. In all methods used the underlying ideas are—

First, to isolate the predominating organism.

Second, that organisms grow and flourish in necrotic tissue and pockets.

Third, that the perverted proteolytic processes of conquered phagocytes aid in their development.

Thus to have blood serum in its healthy state and phagocytes active as such are essential. The two most common methods to obtain this are the physiological and the antiseptic. The physiological method was advocated by Sir Almroth Wright, who has shown that accumulation of pus and débris tend to promote destruction of the phagocytes, and in their death they liberate a ferment that digests the albumen of serum to peptones, a culture medium for bacteria. The coagulability of serum and lymph is increased, and their coats are deposited on the wound wall, which becomes lymph-bound, preventing any fresh blood serum with its bactericidal power and phagocytes from appearing, and consequently infection increases. To prevent this Wright has advocated the use of hypertonic salt solution, 5 per cent or over, with 0.5 per cent sodium citrate added. This promotes a free flow of serum, prevents the wound becoming lymph-bound, and readily washes away products of putrefaction. On the other hand, it has been shown that it prevents leucocytic migration and phagocytosis. It destroys white blood cells when brought in contact with them, and definitely inhibits bactericidal activity.

For these reasons it has not been received with

the same enthusiasm as antiseptic methods of which the Carrel-Dakin is the most highly considered.

Here antiseptic is taken in its therapeutic meaning rather than as a prophylactic. It is based upon the fact that the presence and multiplication of bacteria upon the surface of a wound retards the normal process of cicatrization.

The substance used to obtain a healthy relatively uninfected surface must be powerful enough to kill bacteria, yet not have a deleterious action on tissue. Dakin's chloramines were taken and a perfected technic of their application worked out by Carrel. As in the above, but with even greater care, the whole wound is mechanically exposed and cleansed. Carrel tubes are inserted and loosely packed in place with gauze, and the wound is flushed with a titrated Dakin solution at given intervals, or the solution is delivered at the rate of five to twenty drops a minute, depending upon the amount and consistency of the purulent discharge.

The kind and number of organisms per cubic centimeter are obtained and checked daily. These estimations are plotted to form the microbial curve, which is used as an index to progressive sterilization. This method allows an early (eight to twelve days) secondary closure of wounds. To this also objections have been offered in that the microbial curve cannot be a true index. A smear may be taken from a healthy granulating surface and not from a sloughing edge, and the virulence of the organism is not taken into consideration; however, all are agreed that the most striking feature of a wound so treated, is the rapidity with which large sloughs are digested away, and the surface becomes smooth, clean, and bright in color. Further: true results can be obtained only when proper apparatus and solutions are used by a competent and properly trained operator.

This has taught us greater general care of wounds, and that free drainage of the remotest parts and mechanical cleansing will give the body fluids their best advantage in fighting disease.

Daufresne sought to obtain a similar action by a paste that could be used where it was impracticable to carry out the proper technic of Carrel. He sought a preparation that would yield Dakin's chloramines in a slowly absorbable base that would keep in constant contact with the wound. After many trials he selected neutral sodium stearate. It has now been found that this is effective only in wounds with a thin discharge and a

small amount of slough, also that finally it requires a most careful technic to prevent re-infection and auto-inoculation.

Sir Berkeley Moynihan summarizes his conclusions after a careful study of these various methods as follows: "Perfect mechanical cleansing is essential, with early physiological, and later antiseptic treatment; and, further, similar results have followed without the introduction of any one particular agent, providing careful wound detail is maintained. Finally, with emphasis, complete immobilization of the part under treatment. Excision of wounds as a general practice is not considered advisable, and is limited to small wounds badly lacerated."

As in the case of wounds, numerous burns from all conceivable causes, in all three degrees, were dealt with. A review of literature points to the paraffin treatment as giving the best results. Skin-grafting is not included in this far-reaching statement, for its indications are somewhat specific. In all degrees of burns it was recommended to begin the paraffin treatment immediately, and in second and third degree burns of the face, neck, hands, and immediate vicinity, to resort to skin-grafting as soon as the sloughing of the burned tissue has ceased.

The view most commonly accepted is, that burns are not to be scrubbed with soap and water or any antiseptic, but are to be mopped with dry sterile gauze. A layer of sterile albolene is applied, and then a light layer of wax, over which a layer of cotton covered with wax, and a cotton bandage are applied, and the edges sealed. The part is immobilized, and the dressing left in place for from three to five days, when the same procedure is repeated.

The Surgeon General's office advises that all burns presenting possibilities of contracture or disfiguring scars shall be skin-grafted early; that burns of the posterior surface of the elbow, the dorsal surface of the wrist, hand, and fingers, and the anterior patellar region should be immobilized in flexion; that the anterior surface of elbows, the anterolateral aspect of the neck, the palmar surface of the wrist, hand, and fingers, and the popliteal space should be immobilized in extension, and burns of the groin, crotch, and axilla be immobilized in abduction.

In the treatment of simple fractures little new has been demonstrated. Many new splints have been devised with the primary object of simplification and durability to meet the emergencies of

war, rather than attempt a new departure in immobilization and its maintenance.

In compound fractures the consensus of opinion was at first conservative, but, on account of the different types of fracture met with, due to high explosives, shrapnel, and greater amount of infection, radical treatment was necessary for the conservation of limbs and, in fact, of life. All these wounds were opened wide and cleansed, complete hemostasis obtained, nerves sutured, tendons and ligaments repaired, and the wound either closed primarily or treated with Dakin solution and closed later.

The greatest amount of care was exercised in the immobilization of parts and the care of the wound. In contradistinction to this, the writings show that the German surgeons favored a very conservative plan from the beginning, claiming better end-results.

A welcome surprise and discovery was the demonstration that joint synovia tolerates and even disposes of infection to a degree not hitherto suspected. This, consequently, radically changed the pre-war standard treatment.

A review of the literature, based on a carefully studied series of cases by different operators on the various fronts, shows that different procedures are advocated, but the principles underlying their methods are the same.

Joint-injuries are divided into two classes:

First, arthritis, with and without suppuration.

Second, perforating and penetrating wounds of the joint.

Immobilization and extension are prime factors to success, no matter what method is used.

Arthritis without sepsis yielded readily to this procedure, plus the local application of heat. In the case of arthritis with sepsis we find it difficult to follow the varying reviews. Wide arthrotomy, cleansing out the joint, drainage to the joint, but not into it, and even resection in progressing infection in the hope of preventing amputation later, and at least, to save the limb, were advocated. Then the diametrical opposite was advanced, namely, early amputation in progressive sepsis, to save life.

Lastly, that which now seems to have gained the most note is lateral incision down to the joint, no drains or antiseptic fluids being used, but early motion with continuous application of heat. This early motion actually squeezes the pus out of the tissues. It is painful and hard to do, yet the end-results seem to justify its use when compared with the earlier methods.

The simple perforating wound is the only one of the second class that is treated conservatively. Here the wounds of entrance and exit are excised and closed, and immobilization practiced.

In penetrating wounds, all are agreed that early operation gives the best results. Opening wide, cleansing out the joint cavity of foreign material, blood, etc., suturing the synovia, and then draining to this or leaving the wound open, is the method. If there is much trauma to bone, resection is preferred to early amputation. The indications for early amputation depend on the arteriovascular injury rather than the bone injury. It is worthy of note that it matters not what fluid is used in cleansing the joint as long as the joint is properly cleansed and complete hemostasis obtained. Further: suppurative conditions of the knee-joint are the most serious.

Considerable opportunity was afforded for the application of experimental data in nerve injuries. Here, probably more than in any other phase of surgery, it is too early to draw conclusions as to ultimate results. Certain fundamentals that are constant are worthy of note.

First is care, in the examination, to note the extent of the injury and the condition of the muscles supplied by the nerve; and in healed cases, whether there is primary union of simple flesh wounds, loss of tissue with a long period of suppuration, or whether there is any bone involvement; for upon these depends the method of procedure. Most agree that the immediate suture, when possible, should be done; later, while awaiting the proper time for intervention, massage, baths, and electrical treatments are continued to improve the circulation and tone of the muscles. Proper splinting to overcome contracture, and stretching of paralyzed muscles, tendons, and joints are essential. Operation is deferred one month after the closing of wounds of soft parts, three months after complete closure where bone involvement has been present, and indefinitely, when progressive signs of returning function are present.

In addition to the usual technic in operations, transverse section of the nerve is made until healthy fasciculi are seen. They are joined by interrupted catgut sutures through the neurilemma only. Trend of opinion seems to favor not using any foreign sheaths to protect this line of suture. Then a long post-operative period is present in which the proper use of splints plays no minor part, but the usual passive motion, heat, massage, and electrical stimulation are used.

The advances in the treatment of shock and hemorrhage, while promising, have not given us that which was hoped for with the opportunity of study offered. That shock and hemorrhage are two distinct clinical entities has been further demonstrated. That the treatment of one while applicable to the other, for they are often associated, does not give the same results. The use of heat, posture, rest, and morphia has not been superseded by any better treatment, but in the case of hemorrhage it has been decidedly aided by the use of a 5 to 7 per cent intravenous injection of gum acacia; and in shock repeated injections of small amounts of glucose are useful. Each of these has distinct advantages over saline. Ringer's solution, adrenalin, or pituitrin in that they are less diffusible through the vessel wall, and their action is more constant and longer sustained.

The late theory of Major Cannon is that shock is the end-result or allied to acidosis, and that treatment of it, as such, with intravenous soda solutions gives the best results.

Commentators upon this theory are inclined to the belief that acidosis may be often present, but that the treatment of the acidosis only will not suffice in the treatment of shock as seen in a healthy, well-nourished individual with sudden cerebral or abdominal injury when shock intervenes before the condition of acidosis arises.

In reference to penetrating, perforating, and open wounds of the chest: new radical procedures have been advanced with wonder statistics, yet the more conservative surgeons are prone to adhere to more practicable methods.

The conditions that call for interference are open chest wall, hemorrhage, foreign bodies, and, later, sepsis. An open chest with more or less loss of chest wall demands an immediate attempt to close the same after controlling the hemorrhage, either replacing or resecting the injured lung tissue, removing the foreign bodies, and closing the wound tight.

With regard to hemorrhage: all observers are agreed that only with progressive hemorrhage with signs of pressure dyspnea and impending death, is it justifiable radically to enter the chest, suture, or plug the bleeding area, mop out the pleural cavity, and close the chest tight.

Pierre Duval, a French surgeon, whose chest work was the most brilliant of all, with a mortality of 20 per cent in 3,453 cases, strongly advocated and practiced this radical intervention. He noted that, first, a differential diagnosis be-

tween shock and hemorrhage must be made, which was often difficult, for in one it meant death, and in the other a chance for life. Local anesthesia or oxygen-ether is preferable. There was no increase in shock, fall in blood-pressure, or material difference in the type of respirations during operation: and it has saved two-thirds of this type of dying cases.

All cases of hemorrhage are carefully watched and, at the end of seven to ten days, are aspirated, and further operation depends on whether the wounds are sterile or infected. If sterile, repeated aspirations with injection of oxygen to prevent the firm dense adhesions found, if left alone, are made. In the presence of sepsis the results of simple thorcotomy or rib-resection with a single large tube were discouraging, the application of well-placed smaller tubes and the use of Carrel-Dakin technic to liquify the pus reduced the time from one to six months to one to four weeks, with a patient that was in better physical condition when the wound was closed, than when subjected to months of chronic suppuration.

The treatment of foreign bodies was a source of dispute. Some preferred to remove them all, others only the larger ones and upon symptoms caused by their presence. It is remarkable to note the deliberate method by which these were attacked. Good results followed rib-resection over the site of the foreign body, the pleura peeled well off, and complete hemostasis obtained; the pleura was opened and the whole hand introduced and light adhesions separated, the lung palpated, and the area containing the foreign body drawn into the wound, the lung incised and the foreign body extracted, the lung tissue accurately closed, especially the visceral pleura, the hemorrhage controlled by catgut suture, the pleural cavity mopped out, and the chest wall closed without drain. It was found that few developed severe empyema. Over 90 per cent of foreign bodies were infected. *Staphylococcus* was found to be the usual organism present.

Empyema, as a complication or end-result of acute infective intrathoracic disease, presents an entirely different phase. We shall not enter into the controversy arising from the diversity of opinions regarding the indications for operation

or proper technic, but shall briefly state the final conclusions of many workers.

This condition varies in severity and manner of formation and reaction, according to whether it accompanies the usual lobar pneumonia, influenza pneumonia, or the streptococcic pneumonia; and further, whether it is a sporadic case or occurs during an epidemic.

In the usual lobar pneumonia empyema appears after the acute process of disease is past and the patient is in fair condition, and as true pus. In bronchopneumonia it appears early while the patient is embarrassed by the process of disease, cyanosis, and dyspnea out of proportion to the amount of lung involvement, and frequently on the side least involved, as a seropurulent fluid rich in organisms; and it takes from five to twenty days before thick pus appears.

Thus early and free evacuation of the pus in the first class of cases is attended with immediate improvement, but early and free evacuation of seropurulent fluid in the latter is attended with a high mortality. Repeated aspirations and lavaging the cavity and late operation when the pus is thick and the patient has weathered the worst of his disease, give the best results.

Numerous procedures for aspiration and lavage with saline, Dakin's, and other fluids have been devised.

As to the method of operation: puncture with trocar and small tube inserted, if flushing is to be used, or rib-resection, if the pus is thick, and the use of instillations of Dakin's fluid are recommended. The results seem to be influenced by the time of the year, spring being the most favorable. Whether in the midst of an epidemic or not, early cases do badly, and as the epidemic declines a greater percentage of cures is obtained.

CONCLUSIONS

It will be seen that the volume of new work is great, that it is scattered widely and that sufficient time has not elapsed to permit the results to be carefully sorted, so that they may be a source of ready, reliable information.

If this brief review suggests an interesting phase of work and stimulates someone to collect further data with the idea of their application to civil practice, then the paper has served its purpose.

DIFFERENTIAL DIAGNOSIS OF GASTRO-INTESTINAL DISTURBANCES: PRESIDENT'S ADDRESS*

By W. P. BALDWIN, M. D.

FARGO, NORTH DAKOTA

There is nothing, probably, more difficult for the general practitioner than the differential diagnosis of gastro-intestinal disturbances. The study of gastro-intestinal disorders is somewhat different from that of disease elsewhere in the body, because we are helped in the former study little in most cases by physical examination.

If the physician knows how to interpret the history and other available findings understandingly, he will be able to arrive at a correct diagnosis in nearly all cases.

Probably much of the present difficulty is due to the faulty classifications and great detail of the textbooks on this subject. As a matter of fact there are relatively few diseases of the gastro-intestinal tract, and it is probable that most stomach troubles which give symptoms can be divided into ulcers, cancers, and, rarely, acute gastritis. The most common bowel disorder is the irritable bowel, commonly known as and called *colitis*, which is usually due to the use of cathartics and enemas. It is not really an inflammation, but an irritation. Constipation is not so common as is generally supposed; however, it is not within the scope of this paper to discuss all conditions of the stomach, and I will consider only the two most common conditions.

Essential in the diagnosis of these conditions are the following:

1. An accurate history, which takes time, is necessary, and every detail should be followed.
2. Careful laboratory tests, including the observation of the patient at the time of his distress.
3. X-ray investigation of the gastro-intestinal tract, both by the fluoroscope and plates.
4. Physical examination, and any other tests that may be indicated.

In regard to laboratory tests: most important are the examinations of the stomach contents and the stools at frequent intervals. In an investigation of a supposed peptic ulcer the Ewald test meal and the motor meal should be given as a routine procedure. In both of these procedures a careful investigation must or should be

made as to the presence or absence of blood. Examining for the presence of free acid is of great importance. The fractional determination of the acid content of the stomach is not necessary, as the important thing to ascertain is the presence or absence of free hydrochloric acid.

It is necessary in the examination for blood to omit meat from the diet, and exclude bleeding from the nose, gums, and hemorrhoids. We may have bleeding in hemophilia, uremia, leukemia, splenic anemia, septicemia, and all acute infections.

As for treatment: Control of acidity, rest in bed, diet for nourishment are demanded. The patient should be kept in bed a minimum of three weeks, then up a week at the hospital on three small meals a day, and under proper treatment. The management should continue for at least one year, and then the patient should report frequently for observation.

Bowel distress is the most common abdominal distress a physician is called upon to treat. Most bowel distress originates in the colon. Probably 75 per cent of all abdominal distress is due to an irritable colon. The most common cause of this irritability is the persistent use of cathartics and enemas. We know little of the cause of this distress, except that it is probably due to pinching of nerves in the gut-wall. Tension within the bowel may also be an important factor, and is due to gas and cramping of the bowel muscles. A bowel distress may vary from a consciousness of one's self below the diaphragm to a feeling of fullness, pressure or weight, burning, gnawing or bearing distress, or severe colicky pain, which may double the patient up. We see many cases where it is necessary for differentiating between a bowel condition, appendicitis, gall-stones, and gastric or duodenal ulcer.

When the bowel becomes irritable, the normal peristaltic movements are greatly exaggerated. The patient may have intestinal distress with or without diarrhea, if there is considerable cramping down of the gut. The material may not be forced out sooner than normally, and finger-thick, or pencil-sized, or flat ribbon-like stools may occur in these spastic bowel conditions.

We find many people who think they are con-

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stipated after missing a movement one day, and immediately resort to cathartics or enemas. These people are not constipated unless they have hard stools. Many of them cannot remember when they had their last constipated bowel-movement, but all think they are constipated because, if they omit the cathartic, the bowels do not move for a day or two, when we know it takes from four to six hours for the food to pass through the small intestine, and 24 to 78 hours for the residue to pass through the colon. Thus we can readily see the reason why the stool is delayed. Habitual users of cathartics are usually about two or three days ahead of their natural bowel-movements.

I want to say, in conclusion, that constipation can be controlled by diet, and that there are few indications for cathartics in the practice of medicine.

FOODS WITH LITTLE RESIDUE

Meat	7 per cent
Eggs	8 per cent
Milk	15 per cent
Cereals	25 per cent
Rice	25 per cent
White bread	40 per cent
Rye and graham bread...	50 per cent
Custards	

RESIDUE IN FOODS

No. 1.

<i>Green vegetables—</i>	Spinach 90%
Lettuce	Squash 90%
Celery	Parsnip 90%
Peas 40%	Turnip 90%
Irish potato 50%	Brussels sprouts 90%
Sweet potato 60%	Cauliflower 90%
String-beans 65-70%	Cabbage 90%
Carrot 85%	Sauerkraut 90%

No. 2.

<i>Cooked fruit</i>	Apple sauce
Prunes	Baked apple
Figs	Marmalade
Peaches	Jams
Pears	Etc.
Apricots	

No. 3.

<i>Raw fruit</i>	Melons
Peaches	Oranges
Pears	Grape-fruit
Apples	Etc.

No. 4.

<i>Etc.</i>	Lemonade
Bran	Fruit juice
Buttermilk	Ice-cream
Cider	Etc.

SPECIALIZATION IN MEDICINE: PRESIDENT'S ADDRESS*

BY GUDMUND J. GISLASON, M. D.

GRAND FORKS, N. D.

My name has been put down for a presidential address and while the few remarks I may make will certainly not be at all worthy of so presumptuous a title, I welcome this opportunity of thanking you, my colleagues and fellow-members of the North Dakota Academy of Ophthalmology and Oto-Laryngology, for the honor you so generously bestowed upon me, a year ago, when you selected me to serve as the Academy's president, during this first year of its infancy, which is now closing.

As a society, we are today celebrating our first birthday anniversary, and, although we can boast of no great achievements during this short period of our existence, I trust that we are unanimously of the opinion that the founding of the Academy was a step in the right direction, one with prom-

ises and possibilities of great good, not for ourselves alone, but for the entire profession and the general public.

Specialization in medicine is of great antiquity. Specialists seem to have had their place in the profession among the Assyrians as far back as the days of Abraham; and more than 2,400 years ago Hippocrates inserted into his famous oath, which he demanded of his students, that they should devote themselves to the particular field of medicine in which they were especially trained, and not to "cut a person laboring under the stone," but that they should "leave this to be done by men who are practitioners in this work."

The beginning of the practice of our specialty in this state is comparatively recent. Its history dates back only twenty-two years. In 1898 North Dakota got its first eye, ear, nose, and

*President's address before the second annual meeting of the North Dakota Academy of Ophthalmology and Oto-Laryngology, Minot, N. D., June 15-16, 1920.

throat specialist. He set up his office in Grand Forks. One year later Fargo was similarly blessed. Both these men were well equipped for their work, having received considerable training in their specialties not only in this country, but also in the best medical centers of Europe. I mention this because they, by so doing, gave a precedent which was truly worthy of emulation and should have served to fix a standard for those who came later. During the next few years more men entered this field, so that in 1905 we find that the number of those claiming expert knowledge (that is what the name *specialist* indicates) had increased to seven; in 1910 it had risen to thirteen; and according to the official directory of the American Medical Association for 1918 there were at that time in this state twenty-four physicians who reported that they limited their practice to the eye, ear, nose, and throat, and twenty-four who claimed to pay special attention (whatever that means) to those organs.

In the past, we eye, ear, nose and throat men in this state have lived the severely individualistic life of the frontier, regardless of the fact that our frontier days have long since passed. It has been a case of each man for himself, with no concern about the other fellow and seemingly forgetting that we have any common interests to defend or ideals to uphold. And yet we knew all the time that with the public and quite commonly with the general practitioners as well, there is a disposition to think of us collectively as specialists who do the same things in much the same way. It, therefore, follows that the efficiency of one of our number reflects credit on all the rest of us, while inexcusable ignorance and incompetency are apt, in like manner, to result in condemnation of us all. Thus, as a class, we are justified in counting every individual amongst us as either an asset or a liability, depending on whether he adds to or detracts from the sum total of our usefulness to society and our standing among the rest of the profession and the general public.

Specialism has come to stay. In every sphere of human activity it is the specialist, the one who has devoted his life and talents to intensive study of some particular and limited field, who is found in the vanguard of human progress, who is carrying the beacon light that illumines the way onward and yet further on into the unexplored jungles of regions yet unknown.

In medicine, specializing is not without its

drawbacks, and, just as general practice in its all inclusive sense is admittedly beyond the ken of mortal minds, so we must admit that a specialty in its narrowest meaning is an impossibility. The human body is a unit, whose different parts or members are so intimately united and interdependent that it is evidently impossible to treat any one organ without a fair knowledge of, and an ever present and conscientious regard for, all the rest. In short, the very foundation, the very essential for the right beginning of a special training and after that for the successful practice of any specialty, is a good general knowledge of all the departments of medical practice, and thus it follows that a good specialist must at all times possess the medical knowledge of a good general practitioner as well. Of course, we all realize this, but it is nevertheless necessary to bear it constantly in mind and to use every opportunity to keep up in general medicine. We must always be alert and fight against any tendency of our medical horizon to narrow down to the specialties which we practice.

No one can charge the eye, ear, nose and throat men of North Dakota with neglect in this respect, judging from the interest they take in every general medical organization, from the county society up to the national association. In the local societies, where practically all papers are on general topics, they are, as a rule, among the most regular in attendance at meetings and the most interested in the welfare of the organization. The fact that they seldom read papers bearing on their specialties before these societies is because they are not as a rule well received. The average general physician and surgeon takes no interest in the eye, ear, nose, and throat: he just takes out tonsils.

Although this interest in general medicine and this co-operation with the rest of the profession are, as I have stated above, indispensable and essential to our success, yet, the fact remains that we are, and of right ought to be, most vitally concerned with the branches in which we have specialized and about which we claim to possess expert knowledge. To that extent, therefore, we are in a class by ourselves, with interests and problems which are peculiarly our own and which are separate and apart from those of the rest of the profession. Most of these problems of ours cannot be successfully met by us individually, any more than the problems of the general profession can be solved by individuals. It is easy to see, therefore, what an im-

portant thing it is to have an organization like this which is entirely devoted to such problems, which seeks to unite us for a common good, to remind us of our common interest, to uphold high ideals, and to raise our standard of professional ability and integrity—a society, which is of, by, and for us, as eye, ear, nose, and throat men, an institution where we can learn from each other and be imbued with and stimulated by

each other's enthusiasm, where we can learn to know each other and wipe out the petty jealousies and misunderstandings which are the progeny of isolation and aloofness.

Our duty is clear. Let us join in a united effort to make this Academy what it ought to be: a credit to ourselves and to the state in which we live.

THE PROBLEM OF SYPHILIS IN GENERAL DIAGNOSIS*

By JOHN H. STOKES, A. B., M. D.

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Within the twenty minutes allotted to me I should like, first, to point out in topical form what I believe to be certain defects in the modern diagnostic approach to syphilis; secondly, to interpret one or two elements in the conventional tests for its presence, and, thirdly, to indicate certain directions in which the every-day man could, without serious inconvenience, extend his diagnostic armamentarium with a corresponding increase in the amount of syphilis recognized and a decided gain in the treatableness of the disease owing to its earlier recognition.

Syphilologic diagnosis in the past has been hampered in three ways: by a low threshold of suspiciousness on the part of the physician; by a tendency to substitute subjective for objective approach in a disease in which the subjective element is notoriously conspicuous and misleading; and by a tendency to rely upon a single test or criterion to demonstrate the presence of a disease whose innumerable complexities and ramifications cover the entire field of medicine. In spite of its high value as a diagnostic aid the tendency to treat the Wassermann test as a final diagnostic resort has been a source of many costly blunders.

Before the every-day diagnostician, who does not employ routine diagnostic procedures, can begin an investigation for syphilis he must suspect its existence. Considering that syphilis is as prominent in internal medicine as pus is in surgery, one might reasonably expect the general diagnostician to be as much on the lookout for the trail-marks of the *Spirochaeta pallida* as the surgeon is for pyogenic infection. Yet, even on the genitalia, where every lesion, *post coitu*, should be regarded as potentially a chancre, the

threshold of suspicion is so low that diagnoses, ranging from chancroid through "cold sore," "chafe," and "hair pimple" to "pooh-pooh," are all too common. The extragenital chancre, even on the physician's own person, is rarely regarded with enough suspicion to lead to a diagnosis before the appearance of secondary manifestations. The steadily rising proportion of extragenital compared with the genital onsets of the disease, recently commented on by Morton Smith, impresses me as silent testimony to a desirable rise in the threshold of suspicion. If I can do nothing more than lead you to think of syphilis first, rather than last, among the diagnostic possibilities in any case I shall be an ambassador, indeed, in the name of progress.

General medical diagnosis is based, to no small degree, on subjective criteria. The first instinct of the general medical man seems to be "to take a history." On the other hand, the dermatosyphilographer feels that this is putting the cart before the horse. So firmly is the purely objective approach to a diagnostic problem impressed upon us that a highly trained man in our specialty evidences his training in no more distinctive way than by refusing to ask a question or hear a statement from the patient until the objective examination is complete. Syphilis, the most objective of all diseases, should be approached in this way. Sixty per cent of its diagnoses depend on laboratory procedures, and 40 per cent on routine physical examination. Its subjective history is full of pitfalls and gaps. Its symptomatology is often grossly misleading, particularly in the cardiovascular and nervous-system involvement, which to a varying degree appears in most late cases. Its onset is concealed in a history of gonorrhea, instead of syphilis, in 25 per cent of

*Presented before the South Dakota State Medical Association, Sioux Falls, S. D., May 19, 1920.

patients; and 60 per cent of patients who develop late complications can give no history of secondary manifestations. Fildes and Dudding found, as evidence of the efficiency of objective examination in early syphilis, that 65 per cent of all genital lesions could be identified at once as syphilitic by the dark field, and that only 14 per cent of patients not proved to be syphilitic by this means subsequently were shown, by the Wassermann follow-up, to have acquired syphilis. Sixty-four per cent of a group of late syphilis studied on my service showed evidence of the disease in the spinal fluid as compared with 47 per cent with positive Wassermann reactions on the blood. Sixty-two per cent of a group of 100 patients, 80 per cent of whom had neurosyphilis, showed pupillary abnormalities and eye-changes, whose detection could have been accomplished by a general examiner. Sixty-five per cent of them showed abnormal knee-reflexes and other comparatively simple objective neurologic signs easily detected by the ordinary physician. The highly misleading character of the subjective-presenting symptom, on which we are so prone to rely, will be apparent from the following table taken from a study of syphilis in railroad men:

TABLE I

PRESENTING SYMPTOMS IN RAILROAD MEN

	Per cent
Gastric symptoms	28
Complaints not suggesting syphilis, such as hernia, constipation, broken nose, etc.	18
Headache and head pain.....	16
Cardiac symptoms (pain, dyspnea, palpitation)	14
Diplopia and poor vision.....	14
Malaise, weakness	12
Shooting pains	10
Bladder symptoms	10
Nervousness	8
"Do I have syphilis?".....	8
*Laryngeal symptoms	8
"Rheumatism"	4
Ataxia	4
Girdle pains	4
Dizziness	2

*4 per cent supposed T. B.

Summing up my personal impression: While I do not wish to appear to undervalue the history of syphilis, I believe it would be comparatively easy to show that on the customary over-reliance on the subjective, rather than the objective, ap-

proach to syphilis, it is impossible to identify 50 per cent of outstanding syphilitic infections.

If, now, we add to the failings of an over-subjective approach to the diagnosis of syphilis, the difficulties induced by attempting to pass the disease through a single objective diagnostic screen in the form of a Wassermann reaction, it becomes easy to see why so much syphilis goes unrecognized; why the physician himself is so frequently the personal victim of his own failure to identify the condition in his patient; and why syphilis is coming to be recognized as first among all causes of death. No less than twenty-one separate groups of procedures, ranging from a social estimation and history and the examination of the family, to necropsy, as shown in Table II, must be invoked at one time or another in deciding the question, "Is this syphilis?" In the darkness of such a forest of spirochetal possibilities the serum-Wassermann result is, at best, but a feeble lantern-gleam.

TABLE II

THE MULTIPLE PROCEDURE DIAGNOSTIC ATTACK ON SYPHILIS

1. The intensive study of the anamnesis.
2. The social estimation of the case.
3. The study of the family both in history and examination.
4. The serum-Wassermann reaction (single antigen).
5. The modifications and intensifications of the serum-Wassermann test, such as the provocative, cold fixations, multiple antigens, and Wassermann series.
6. The examination of the cerebrospinal fluid (two Wassermann tests, Nonne, cell count on the fresh fluid, colloidal gold test).
7. The dark-field examination and stains of fresh secretions.
8. The luetin test.
9. The Levaditi and other tissue stains.
10. The neurologic examination.
11. The eye examination.
12. The ear examination.
13. The nose and throat examination.
14. The dermatologic examination of the skin and mucous membranes.
15. The visceropathic studies of the liver, spleen, and stomach, involving the study of anemias, blood dyscrasias, test-meals, esophagoscopy, röntgen examination, and so forth.
16. The special cardiovascular examination, in-

cluding the physical findings, blood-pressure, and electrocardiographic examination.

17. The röntgenologic examination.
18. The explorative operative procedures (selected until after therapeutic test).
19. The genito-urinary examination.
20. The therapeutic test.
21. The necropsy.

In spite of its limitations, however, the Wassermann is too valuable a test to merit undeserved distrust or to suffer for lack of proper interpretation. All of you realize, of course, how useless it is in the recognition of the earliest signs of a beginning infection, and yet how essential it is to follow up every genital lesion not identified by dark-field by a series of weekly tests during a period of at least three months. All of you appreciate, too, the weaknesses of the negative Wassermann test after the secondary manifestations have disappeared, and the fact that the *Spirochaeta pallida* may be cultivated from the blood and identified in mucous lesions in the mouth and about the genitalia, while the Wassermann test remains negative. I have repeatedly seen a long series of negative tests, particularly in women, abruptly illuminated by the birth of a syphilitic child or the appearance of some unmistakable cutaneous sign. The value of the provocative procedure, which adds about 20 per cent to the efficiency of the Wassermann tests, has been discussed in previous publications from my department. Even a series of Wassermann tests on successive days may reveal an unsuspected infection negative to the first test.

One of the problems that most disturbs the diagnostician is the conflicting or inconsistent Wassermann report, in which two laboratories checking against each other give opposite results, or in which a single laboratory using several antigens will give different reports with each. Antigen interpretation is one of the most important elements in an intelligent use of the Wassermann reaction. There is little doubt in my mind that a single antigen test with a highly cholesterinized preparation, while it identifies many concealed infections, will also yield a surprising per cent of false positives. This tendency to false results is predisposed to by such conditions as tuberculosis and, perhaps, pernicious anemia. The influence of stale blood and bacterial contamination in producing untrustworthy results by some technics must be recalled. On the other hand, an acetone insoluble fraction

antigen will sometimes give negative results where other antigens will be positive. It represents, therefore, the conservative end of a multiple antigen test. In the interpretation of the Wassermann reaction it is well to remember that Wassermann positiveness as a solitary manifestation of syphilis is comparatively rare, and that a large proportion of patients will show other evidence of the disease if a sufficiently complete examination is made. The single positive and the partial or weak positive Wassermann, like the single negative, calls for further study from other angles, and not merely by repetitions of the Wassermann test, before final decision.

In attempting to increase the acuity of syphilologic diagnosis let me urge you to extend your search for the disease in three directions particularly, always bearing in mind the crying need for early recognition if we are to have truly effective treatment. First, I want to bespeak a wider use of the dark-field. There is no reason why every town of three thousand should not have one man equipped to examine genital and extragenital lesions by this means. If you will yourselves become increasingly suspicious of syphilis; he will be kept busy, and you will be agreeably surprised by the fruitfulness of the results. The apparatus for such work is now greatly simplified, and the technical difficulties due to differences between certain spirochaetes, so often emphasized in the literature, are really more imagined than real. In the second place, learn to avail yourselves of the examination of the spinal fluid, which has become one of the vital necessities in the identification and therapeutic control of syphilis. Remember that to be worth anything the fluid must be fresh, and that a cell-count must have been made within two hours after it is drawn to prevent errors due to autolysis, settling, and agglutination of the cells. No spinal-fluid examination is worthy of the name which does not include a Wassermann test on several concentrations ranging from 0.2 to 1 c.c., a globulin estimation, an accurate cell-count, and a Lange or colloidal gold test. In the interpretation of the results remember that in early neurosyphilis an increased cell-count may precede a positive Wassermann test on the spinal fluid and the appearance of recognizable neurologic signs by as much as two years, and that in certain types of vascular syphilis of the brain the fluid may show comparatively little departure from the normal. Apparently normal spinal fluids are also by no means uncommon in the gastric crises of

tabes dorsalis. Negative Wassermann tests on the blood over long periods of time with a negative provocative test in addition, may be completely reversed by the finding of a rapidly progressing neurosyphilis on spinal-fluid examination. The bearing of this fact on the decision as to when a patient is "cured" is obvious. The gold sol test in the first zone, suggesting paresis, has by no means a fatal prognosis and may be present in multiple sclerosis, as well as in syphilis.

The real need in modern syphilologic diagnosis is not for more tests and laboratory aids, but for better synthetic interpretation of those now available, better objective clinical examination, and a revised clinical conception of the disease. The fundamentally polysymptomatic character of syphilis is evidenced by Tables III and IV, showing the range of involvements which a single type of case may present.

TABLE III
ONE HUNDRED AND ONE WASSERMANN-FAST (?) PATIENTS. STRUCTURES PRESENTING EVIDENCE OF SYPHILITIC INVOLVEMENT BEFORE TREATMENT WAS BEGUN.

System involved	Cases examined	Percentage showing syphilitic involvement
Cardiovascular	35 ¹	44
Central nervous	70 ²	30
Osseous	101 ³	30
Visceral (hepatic, splenic, and gastric)	101	21
Cutaneous and mucous membrane	101	17
Lues hereditaria	101	10
Lues latens (positive Wassermann only)	101	10

- 1. Only the patients receiving special examination by Willius are considered.
- 2. Only the patients receiving special examination by Sheldon and spinal puncture, or both, are considered.
- 3. Does not include any routine röntgenologic examination.

TABLE IV
MULTIPLE STRUCTURAL INVOLVEMENT PRESENT IN EACH OF SIX TYPES OF SYPHILIS

- Of 15 patients with cardiovascular syphilis
 - 20 per cent also had neurosyphilis
 - 20 per cent also had osseous syphilis
 - 20 per cent also had cutaneous and mucous membrane syphilis
 - 6 per cent also had heredosyphilis
 - 6 per cent also had splenic, hepatic, or gastric syphilis

- Of 21 patients with neurosyphilis
 - 50 per cent also had cardiovascular syphilis (of 6 specially examined)
 - 18 per cent also had osseous syphilis
 - 14 per cent also had splenic, hepatic, or gastric syphilis
- Of 30 patients with osseous syphilis
 - 43 per cent also had cardiovascular syphilis (of 6 specially examined)
 - 17 per cent also had cutaneous syphilis
 - 13 per cent also had neurosyphilis
 - 10 per cent also had visceral syphilis
- Of 21 patients with visceral syphilis (splenic, hepatic, or gastric)
 - 14 per cent also had cardiovascular syphilis (of 7 specially examined)
 - 25 per cent also had neurosyphilis
 - 14 per cent also had osseous syphilis
- Of 17 patients with cutaneous and mucous membrane syphilis
 - 50 per cent also had cardiovascular syphilis (of 6 specially examined)
 - 6 per cent also had neurosyphilis
 - 30 per cent also had osseous syphilis
- Of 10 patients with heredosyphilis
 - 33 per cent also had cardiovascular syphilis (Of 3 specially examined)
 - 20 per cent also had neurosyphilis
 - 20 per cent also had osseous syphilis
 - 40 per cent also had interstitial keratitis
 - 30 per cent also had eighth nerve deafness

The results of complete examination by a number of methods certainly suggest that the disease will never have a single diagnostic master-key, such as the Wassermann test or the spinal-fluid examination.

Every general diagnostician should become thoroughly familiar with the visible manifestations of the disease. The failure completely to examine the entire body by adequate light is responsible for many blunders. I could show you picture after picture of palmar syphilids, passed over as eczema because the examiner failed to realize that a combination of induration with crescentic configuration, and of peripheral extension with central atrophy, demands the careful elimination of syphilis. In the same way circinate, pigmented, cigaret-paper scars are often more pathognomonic than the Wassermann reaction. I have been fortunate in the opportunity to have seen leukoplakia in the mouth and leukoderma on the neck, at first the only signs of syphilitic infection, followed in time by a train of confirmatory symptoms. The usefulness of eye-

changes and the examination of the nervous system for objective guides to the identification of obscure syphilis are too little appreciated by the general diagnostician. Tables V and VI illustrate the importance which may attach to abnormalities in these two groups of structures which any reasonably well trained physician can identify.

TABLE V
EYE-FINDINGS

"Slow" reflexes	25.0% of 48 cases
Argyll Robertson pupils.....	37.0% of 48 cases
Unequal pupils	14.5% of 48 cases
Irregular pupils	14.5% of 48 cases
Muscular paralysis	12.5% of 48 cases
Fundus changes	26.5% of 34 cases

TABLE VI
GROSS NEUROLOGIC FINDINGS

Abnormal knee reflexes	65.1% of 43 cases
Abnormal Achilles reflexes ..	78.1% of 32 cases
Positive Romberg	38.0% of 39 cases
Speech defect	15.7% of 38 cases
Mental symptoms (diminished attention, irritability, amnesic attacks, etc.)	38.4% of 39 cases
Bladder involvement (cord, bladder, retention, incon- tinence, etc.)	47.5% of 40 cases
Ataxia	36.8% of 38 cases
Paresthesias	55.8% of 34 cases
Hemiplegia	7.1% of 42 cases
Loss of consciousness	7.1% of 42 cases
Let us then carry in our minds, side by side	

with the constant impulse to ask the question, "Is this syphilis?" an abiding realization of the poly-symptomatic character of the disease. If a gall-stone colic recurs a shade too regularly let us not dismiss the possibility of gastric crises after passing the patient through a single test, like the Wassermann, on a single negative finding. If he has pains in the legs let us not call it rheumatism or, if pain in the chest, not dismiss it as pleurisy. If he has six or seven papules on the penis let us not call them hair pimples because the orthodox chancre must be single. If the tonsil is large and the tonsillar gland swollen let us not call it diphtheria or Vincent's angina without a real study of the case. If our surgical brother develops a paronychia or an indolent lesion under the finger-nail let us not call it a wart or a pus-infection, or, when his chancre develops, mislabel it "sarcoma." Attacks of dizziness are not always due to constipation, and nervous breakdowns too often have negative serum Wassermann and positive spinal-fluid tests behind them. If our patient sees double he is not necessarily suffering from Still's disease and if he has gastric disturbance he may not have an ulcer. The great solvent of the modern diagnostic problem of syphilis is a return to the objective and to a realization that a disease which involves perhaps one-tenth of the adult population and every structure of the entire body cannot, in justice to itself, be limited to a single diagnostic manifestation in the form of a positive Wassermann test. In justice to ourselves and to our patients, then, let us search for it by other means.

MALNUTRITION: ITS PREVALENCE, CAUSE, AND TREATMENT

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MINNEAPOLIS

A few years ago the whole country was aroused and alarmed by the enormously high rate of infant mortality that prevailed in this country, as evidenced by the records in the few districts where such records were kept. Owing to the splendid efforts that have been made, hundreds of thousands of babies' lives have been saved; and, while our national rate of infant mortality does not favorably compare with that of some other countries, we now rank eleventh, and may

be justly proud of what has been accomplished. Most of our medical, social, and legislative work along this line is directed toward the betterment and care of the infant. When the war came with its selective draft of the first 2,500,000 young men between the ages of twenty-one and thirty-one years, 38 per cent were rejected because of physical or mental defects, that is, nearly a million men were too defective for use in the army at the very

period of their lives when we would expect to find in them the acme of physical development.

Such figures as these lead us to inquire what is the matter with the young men who have just come from the schools in this condition. They were the school children of yesterday. The answer is found in the investigation of the school children of the present time. From careful studies that have been made, the best authorities declare that 75 per cent of our present 22,000,000 school children show physical defects, most of them preventable and remediable. Prominent among these is malnutrition.

While a comprehensive survey of the prevalence of malnutrition throughout the country has not been possible as yet, from knowledge we have at present it can be said that 20 to 30 per cent of the children of this country are undernourished, that is to say, unreasonably and unnecessarily under weight for their height. The physical standard of the children in the rural schools has been found to be even lower than that of those in the city schools, and three-fifths of the school children of the United States attend the rural schools. This means that there are now 5,000,000 undernourished children in our schools who, if nothing is done to help them, will reach adult life only fit to join our already too large army of defectives. The first question which naturally arises is, What do we mean by "malnutrition"? In itself malnutrition is not a disease, but is a low condition of health and body substance, often accompanied by disease, and for which it maintains an open door. It is nature's danger signal. It is best measured by height, weight, and robustness, but there are many other signs and symptoms of it. The child is pale, probably tires easily, and is often regarded as lazy. There is apt to be a lack of mental vigor. In disposition he may be extremely irritable and difficult to manage. He is nervous, restless, fidgety, and he probably sleeps lightly, and is finicky about his food. The cardinal symptoms, however, are habitual underweight for height and lack of good muscular tone. Dr. Emerson, who was one of the first to direct our attention to the treatment of undernourished children, has called any child malnourished who is habitually 10 per cent under weight for height, and more recently he is using 7 per cent as the standard. Dr. Holt considers 10 per cent under weight for height from the age of six to ten years, and 12 per cent from eleven to sixteen years, positive indication of malnutrition. However, it is of great importance to know

the individual's present annual rate of increase in weight, as compared with height, and any child who is markedly under weight for his height or who does not gain at the normal rate, falls into the malnourished group. As an evidence of the danger of permanent impairment from habitual malnutrition we have only to direct attention to statistics, which show that these children are scored with an average of five physical defects to one in the normally nourished child.

A most important question to consider in regard to malnutrition is, What causes it? Why are so many children distinctly malnourished and a still greater number much below par? It is easy to blame heredity, and there can be no question but that poor inheritance may handicap a child's development. Authorities are generally agreed, however, that heredity is, after all, responsible for a very minor part of malnutrition. The majority of children are born healthy, and, given this start with proper care and food, they should develop normally into healthy, well-nourished children. It is undoubtedly true that the food intake plays the largest part in producing this condition. Nevertheless, when one considers food in its relation to malnutrition, it must be immediately recognized that there are various factors involved. Surprising as it may seem, the actual lack in quantity of food furnished is not usually the primary cause, as evidenced by the fact that nearly as many cases are found among the children of the well-to-do as among those of the poorer classes. Improper selection and preparation of food are the greatest factors we have to deal with, while the very common addition of stimulants, such as tea and coffee, together with faulty habits of eating, are also responsible to a larger degree. Of course, the greatest requirement of the growing child is food. Every movement his body makes, every bit of work it does, requires energy, and this energy must be furnished by the food he eats. If the food supply is insufficient to provide the energy, the body substance is burned, and a loss of weight results. It is essential, therefore, that the diet of a growing child, first of all, should be generous in amount. An insufficient breakfast, whether or not the mid-day and evening meals are adequate, practically always means too little total food for the day. Indulgence in sweets and highly seasoned foods, habitual eating between meals, late hours, unventilated sleeping rooms, and lack of exercise in the fresh air, may all result in a finicky appetite, and thus in the taking of too little food. When-

ever the food eaten habitually falls below the actual need, no matter for what reason, malnutrition is the unfailing consequence.

A diet inadequate in the right kind of food may have equally disastrous results. To be well-nourished, a child must have a well-balanced diet. This means he must have every day variety enough in his food to provide sufficient amounts of protein, carbohydrate, and fat. Certain proteins of animal origin,—milk, meat, and eggs,—are most valuable for growth. The carbohydrates so essential to the proper physical and mental development of the child must be furnished in liberal quantities of vegetables, cooked cereals, bread stuffs, and fruits. The more concentrated forms, such as candy, should be given sparingly and only at such times as not to interfere with the appetite for more essential foods. It is estimated that four-fifths of all food intake is burned up in the production of heat sufficient to maintain a normal body temperature, leaving only one-fifth to supply growth and energy. The fats are our most concentrated heat and energy producers, and they are usually taken in sufficient quantities by the child who is eating normally of milk, butter, and eggs. Another specific need of the child's body is minerals. The food must contain lime, iron, and other minerals, each for a definite purpose. Without suitable amounts of lime and phosphorus, the bones may grow spongy and the teeth be defective, while lack of iron causes anemia. Since milk is about the only liberal source of lime, and since vegetables, fruits, cereals, and egg yolks, in addition to milk, supply most of the other minerals, it can readily be seen that many cases of malnutrition may be caused by too little of one or more of these simple foods. In addition to proteins, fats, carbohydrates, and minerals, a child's diet should contain some of the growth-regulating substances, commonly known as vitamins. One is called water soluble B, and is abundantly found in vegetables, fruits, milk, and all natural food stuffs; the other, fat soluble A, is less widely distributed; it occurs in fat of milk, egg yolks, and in the leaves of plants. There is little danger that an ordinary diet would not contain sufficient water soluble B, but it is quite possible that many children who have no leafy vegetables and practically no milk or eggs may fail to grow normally because of an insufficient amount of the fat-soluble vitamin.

Indigestible foods and faulty habits of eating may also be responsible for malnutrition. The suitability of the food, the hours of eating, and

all other food habits must be considered. One must remember that the digestive tract of the child is, relatively speaking, as immature as any other part of his physical development. The child's system demands simple, well-cooked, easily digested foods, with regular, unhurried meals, and without indiscriminate eating between meals. Failure to take into account these factors often causes indigestion and poor assimilation; and, if the body is unable to use the food provided, undernourishment and physical retardation are as certain as if the diet were inadequate in amount. Prominent among the causes of impaired nutrition and development are insufficient sleep and rest, together with other faulty health habits. Experiments with undernourished children have shown that even after the diet has been regulated they do not gain properly unless the hours of sleep are sufficient and regular. The importance of rest, both mental and physical, as part of the treatment of malnutrition, is plainly demonstrated by class-room work in the schools. Certain children will not gain unless removed from school or allowed only a half-day session. The value of fresh air during rest and sleep periods cannot be overestimated.

The so-called physical defects, so common among children of the undernourished group, are prominent factors in the production of the condition. The most important are the defects which interfere with proper breathing and mastication, or which are the site of focal infections. Enlarged or infected adenoids and tonsils are most commonly found, and may act in two ways: first, they obstruct a free passage of air to the lungs, especially at night when the structures are relaxed, thus limiting the oxidation of the blood stream; secondly, when diseased they impair the health of the individual by giving off toxins or actually throwing off germs into the circulation which are apt to attack other parts of the body, causing permanent injury. When these conditions prevail, no matter how much wholesome food a child eats, the constant war with infections leaves him little chance to hold his own, much less to gain.

Tuberculosis and syphilis are constitutional diseases which must be reckoned with and are potent factors in tardy development when present.

The nervous system is most likely to suffer permanent damage from a prolonged state of malnutrition during the developmental period, and many of our young men and women from

this cause alone are facing the exigencies of adult life in a state of nervous bankruptcy.

While the problem of restoring to health children who are suffering from malnutrition is primarily a medical one, the task is so great and presents so many aspects, educational, social, and medical, that it is only by the concerted and vigorous co-operation of all agencies interested in child betterment that we may expect adequate and permanent results. Efforts at child conservation in this country, unfortunately, have been divided into three separate periods of the child's development,—the infant from birth to two years of age, the child of pre-school age, and the school child. Too often because of this, the child whose health is well supervised during the months of infancy, is entirely lost sight of during the pre-school age, and very probably receives only slight and inefficient supervision during the early school life. The best results cannot be obtained until we have supervision which is maintained from birth to adolescence by a single agency or by a group of agencies whose efforts are sympathetic and well co-ordinated.

The most gratifying results in the fight against malnutrition are obtained in work with the child of school age, but we must remember that there will be a never-failing supply of new cases among these children until we provide better supervision for the pre-school child, and it is to prevent the increase of this altogether too large percentage that our efforts must be directed if we hope to do a permanent good. Far too much of our professional effort is spent in "repairs, relief, and consolation." We have very definite ideas of preventive medicine as regards communicable diseases, but we are very vague where it concerns the neurotic, malnourished, or defective child. It has been well demonstrated that at the "early age" of six years fully 50 per cent of the physical defects found among school children are already present, and in a very large majority of these cases the child's parents have considered him in good health because he was not conspicuously ill. Regular periodical examinations would detect these defects at their beginning, when many can be easily corrected. The first step is to educate the parents so that they may appreciate the simple standards of health and become skillful observers of the development of their children. Malnutrition is often nature's first danger signal, and the parents should know that the child who is habitually under weight is a potential, if not an actual, weakling. In order to carry out a system of supervision which will be effective it is essential

that the child should not be lost sight of at any period of its development. This means prenatal clinics and instructions for the expectant mother in health centers providing infant welfare clinics and supervision of the child until of school age. The mother must be instructed in the value and practicability of breast-feeding, proper food, regular meals, adequate hours of rest under proper conditions for her child, and the necessity of routine medical inspection. As has been noted before, 50 per cent of the physical defects found in our school children are present at the time they enter school, and, unless proper medical inspection is maintained by the school authorities, the percentage of defective children will continue to increase. The situation is well known and deplored by our progressive educators, but it has been only very recently that the attitude of the public has been at all sympathetic toward the free and adequate medical inspection in the schools. Probably for the same reason the boards of education have rarely had sufficient funds at their disposal to employ properly qualified physicians to carry on the work. The detection of acute illness and the prevention of the spread of contagion have occupied the attention of the school physician to the exclusion of any comprehensive study of the less conspicuous but equally serious conditions existing among the physically defective children. Educators throughout the country are free to admit that the physical and mental development of the child are so closely related that they cannot obtain the best educational results unless the child has a foundation of good health. It may be many years before adequate routine medical examinations will be maintained for every child in our public schools, and until such time the best results will be accomplished by concentrating our efforts on recognizing and caring for children who need our help. The recognized standard of weight for height and the annual rate of gain offer a simple and efficient method for detecting the child who most needs help.

Children falling below the normal standard should receive special medical supervision and should be governed by less vigorous class rules than the normally healthy child. The periodical reports for the parents, now covering only the grades of study, should be accompanied by a record of the physical progress as represented by the weight-curve, and greater concern should be had over the child who is making poor physical progress than over the one who is falling below grade in his daily work.

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THE LEUKEMIAS

Leukemia was first recognized by John Hughes Bennett, in 1845. Before that time, or at least until 1841, this disease was regarded as a purulent inflammation of the blood. That infection plays a prominent part in the disease is admitted; but whether the leukemia can be ascribed to a primary infection of the bone marrow, the lymphoid structures, is a subject that will bear discussion. At all events, the average description of leukemia, as the word is commonly used, means that there is an excessive and wholly unregulated myelocytic or lymphocytic hyperplasia, and eventually the white cells of the blood become abnormal white cells, and usually are found in large numbers,—that is, in the neighborhood of 400,000, depending entirely upon the type of leukemia.

The usual variety of leukemia or leukocythemia is a chronic disease of the blood-making organs, characterized by great and persistent increase in the white-blood corpuscles with a diminished number of red cells altered in shape and size, which display degenerate forms. There is a lessened amount of hemoglobin, and, usually, there is an enlargement of the spleen, lymphatic glands, or medulla of the bone (Musser). Of course, this typical form of leukemia varies in degree, so that it may not be recognized unless there is careful study of the case, its causes and its pathology. For instance, one writer says that syphilis, splenic traumatism, heredity,

malaria, bad hygiene, pregnancy, and repeated hemorrhages may act as predisposing causes, but that does not mean very much, and he easily falls back into the usual statement that it has been held due to the absorption of toxic substances from the digestive tract. As a matter of fact, the etiology of the leukemias is not standardized in any way. One finds in the splenic type that there is only a small diminution among the red cells with a small decrease of the hemoglobin. There are nucleated red cells present in abundance; and the leukocytes, both eosinophilic and basophilic, are markedly increased. Characteristic of this form of leukemia is the large corpuscle, the myelocyte, a large cell with large pale-blue nucleus and not ameboid. It is the great number of these myelocytes which makes it possible to diagnose this form of leukemia; and when these myelocytes are increased there is a corresponding reduction of the lymphocytes (and the youngest leukocytes). In the lymphatic form of leukemia this is characterized by enlargement of the lymphatic glands and an absolute lymphocytosis; and in this form in about 15 per cent of the cases there is a greater reduction in the number of red cells than in the splenic form.

But there is almost an absence of nucleated red cells,—this again in contrast to the splenic leukemia. With this reduction of red cells there is a greatly increased number of leukocytes, though less so than in the splenic form, especially the lymphocytes, which may constitute 90 per cent of the white corpuscles.

Gould and Pyle's Encyclopedia gives a short summary of the two varieties:

Splenomedullary Leukemia:

1. Red cells reduced to greater or less degree (at times below 1,000,000). Numerous nucleated forms.
2. White cells about 400,000, of which myelocytes form about 35 per cent.

Lymphatic Leukemia:

1. Red cells about 3,000,000 or lower. Nucleated forms, rare.
2. White cells 100,000, or lower, of which lymphocytes form 90 per cent, either large or small predominating.
3. Myelocytes and eosinophiles are scarce.

The symptoms of leukemia are like other anemias, and ordinarily they are slow in development, chronic in type, insidious, it may be said, and there are pallor, faintness, vertigo, dyspnea, weakness, loss of appetite, indigestion,

headache, and palpation, and commonly there are hemorrhages, enlargement of the spleen or lymphatic glands, or both, with moderate fever, serous effusions, and emaciation, and the urine usually contains an increased amount of urates or uric acid.

Now, all this, of course, is quite text-book like, and conforms, both in description and symptoms, to the average case that is described, but there is another form which is suggested, known as *leukanemia*, a term applied by von Leube to an acute condition of leukemia combined with severe anemia. This disease is usually fatal in from a few days to three months, and the onset may be sudden, with fever and severe tonsillitis, disease of the gums, and Vincent's angina, so called, which is probably nothing more or less than a tonsillitis. This type also includes prostration, hemorrhages, pallor, and rapid decline. There is also often general glandular enlargement, including the liver and spleen; and the reduction of hemoglobin and the erythrocytes, with increase of lymphocytes, usually the large form, is conspicuous. The red count may be as low as 1,500,000. The color-index is high. This, again, sounds very well, but it is not standardized as to form or type, and simply throws us into confusion as to the proper term to apply in these leukemias.

A case which recently occurred in Minneapolis makes the diagnosis of leukemia again difficult. The patient was a man of sixty-one who was thought to be in good health until two weeks before his death. As a matter of fact, he had not been very well for two or three years, but that was attributed to the strenuous work of a general surgeon. His illness began with a soreness of the gums, a slight ulceration. There was no bleeding until after about ten days. An abundant growth of Vincent's organism was obtained from ulcerations on the gums. Later, the redness and soreness extended over a larger area of the mouth and on the throat. The leukocyte count during the first ten days varied from 2,000 to 3,200, a very much lower number than the normal. The differential at first showed 82 per cent lymphocytes. Later on the proportion of lymphocytes rose to 95 per cent, which was quite out of proportion to anything like the typical leukemia. The lymphocytes were nearly all large young forms with conspicuous nucleoli. There was a gradual increase in the lymphocytes until the sixteenth day, when they rose to 17,500; and during the entire illness the red blood-count varied from 2,940,000 to 3,510,000, which was

rather typical of a lymphatic leukemia but was rather higher than a leukanemia. The absence in this case of enlargement of the lymphatic glands, of the spleen, and of the liver was quite noticeable. The acuteness of the onset, and the duration of the attack made the diagnosis more or less difficult, and the post-mortem which followed the death had nothing typically characteristic about it except the minor enlargement of the spleen and the absence of any gross lesions anywhere except that the kidneys were enlarged, and there was an enlargement of the heart which was probably an old condition and had perhaps existed for some time. The typical thing, however, in the post-mortem findings was the large number of lymphocytes, and they infiltrated the lung, kidney, and liver.

The object of this editorial is to call attention to the different forms of leukemias, but not all of them have been noted here; also to suggest that a careful examination is often necessary to establish the type of the leukemia and to make a diagnosis possible, which is necessary as the basis of a prognosis, which is, as we all know, usually unfavorable. Everything done in the way of treatment was negative. Even the introduction of neosalvarsan did not cause the slightest retardation of the symptoms, which galloped on to a fulminating point, and the patient died practically conscious.

DR. HILL'S SECOND RESIGNATION FROM THE MINNESOTA PUBLIC HEALTH ASSOCIATION

Dr. H. W. Hill, executive secretary of the Minnesota Public Health Association, has again resigned his position to accept work in the London, Ontario, public health department.

Dr. Hill is an exceedingly successful director of public health work, and a wizard in raising money; but he is not always wise in dealing with men not of his organization, but of another in like work.

The Minnesota Public Health Association has an unfortunate name, for it conveys an official suggestion not justified by the facts. It is a purely private organization and is no part of the State and shares no power conveyed by the State to its public health organizations. It has not scrupulously, at all times, avoided conflict with the State Board of Health, and not infrequently has embarrassed the Board in its work. We are sure the State Board of Health will always cheerfully co-operate with any and all private

charitable organizations doing health work, but, very properly, it will not brook interference with its own official work imposed by law upon it.

We wish Dr. Hill great success in his work at London, and we should not regret to see him return to Minnesota, for we believe, if he returned, he would work in harmony with the other organizations, whether official or private, doing similar work in the state.

"THE NEUROSES OF PEACE"

In his presidential address before the Philadelphia Neurological Society, January 23, 1920, Dr. James Hendrie Lloyd makes some very telling points in regard to the "neuroses of peace." He says: "We have, in fact, had our minds much fixed on the neuroses of war, until, I believe, the time has come for us to turn the page and begin to think about the neuroses of peace. It is apparent that the dangers of peace may be even greater than the dangers of war, and the panorama of the world, as spread before us today, may make the timid exclaim with King Pyrrhus, 'Another such victory, and we are lost.'"

In the course of his address, Dr. Lloyd speaks of the declining birth-rate in France and other countries, and the freak legislation, both in America and France, which has attempted to overcome some of the decadence in civilized regions. It is said that the French Chamber of Deputies has just rejected, by a narrow margin, a bill granting pleural ballots according to the number of children, and the Senate was still considering it. By this bill, a man would have an additional ballot for every child,—thus, for three children, three ballots, for five children, five ballots, and so on. This calls to mind the case of the woman who came in to see a physician and reported a family of fourteen. Another woman reported the number of her family as eighteen, and when surprise was expressed she told of a woman in the neighboring township who had twenty-four children. What a grand and glorious thing this would be for the man who advocated a ballot for each child! If he was a Non-Partisan Leaguer he would soon restore his prestige.

This question of the low birth-rate in France is not a new one. It has gone on for many years, and was recorded in Carlisle's "French Revolution." Dr. Lloyd also referred to the fact that during such cataclysms as this, in which the people of the country are not only starved but de-

pressed, a race of inferiors begins, and that these inferiors are not very good breeders. What they breed is usually poor stuff. (This is not Dr. Lloyd's comment, but is simply thrown in as a part of the discussion.) It has been proven, time and again, and has been proven by the great war, that revolutions and war are followed by a very large increase of mental and nervous disorders; and, following this, labor unrest with its peculiar views on political and economic situations really displays a pathological trend. It is, as a matter of fact, a psychiatric study, and in some way the condition will have to be cared for unless we expect to wake up some day in a new millenium. As Dr. Lloyd suggests, it will be a sort of league of hallucinations, in which even the most expert neurologist may find it difficult to hold his way. These things increase the perversion of ethics, the onslaught on higher education, the pathopoiesis of the mob, the repressed emotions of the freudians, and the expressed emotions of the parlor Bolsheviks. This, Dr. Lloyd suggests, might be responsible, inclusive of the war or reactions of war, for the peculiar situations which have developed. The big nations are striving for advancement, and the people of small nations are cutting one another's throats. As Dean Inge, of St. Paul's Cathedral, London, said, "Western civilization has received a mortal wound in the late war. On top of all this comes our domestic troubles, our industrial failures, and the various forms of hysteria due to the toll of human brains and human nerves. Everywhere we see evidences of indifference and selfishness, and in the war we saw the evidences of brutalized atrocity. The mask of the man was torn off, and the caveman returned to his own."

In a further paragraph of this address, Dr. Lloyd speaks very feelingly on the psychology of the strike, and says that it is pathologic because it partakes of the nature of a pandemic psychosis and has an underlying paranoid state, the sense of persecution, which leads to acts of resentment and violence, simply an example of mental contagion on a large scale,—the stampeding of the people who are drawn into the catastrophe by some silver-tongued orator.

Dr. Lloyd also brings in prohibition, which he calls pandemic hysteria. In that he decries prohibition, but he really believes in it, as do all physicians, although he thinks that too active effort of the small leaders which calls forth the mob demonstration brings us all down to a common level, and he declares that prohibition is a

demonstration of the failure of the American people in self-government. He further declares that our fathers left us a liberal and rational constitution, but time has proved that it is too good for us. We must need patch and disfigure it with a sumptuary law which would do credit to a village constabulary. Then he takes a shy at hysteria spiritualism, and apologizes to his Society for having neglected to secure the services of Sir Oliver Lodge. He was evidently impressed with the messages so far received from the spiritual world, which were about trivial matters, and he questions whether we need a voice from Heaven to tell a man where to find his gold pencil. He said he would like to inquire about more weighty matters; and perhaps the spirits, if properly approached, would solve some of our doubts in neuropathology. They might tell us, for instance, where the spirochete first gets in his work in locomotor ataxia, or clear up the mystery of the circulation of the cerebrospinal fluid. Dr. Lloyd sarcastically remarks that for a great British scientist to come all the way to America to inform our simple-minded people about a lot of old trumpery and superstitions makes him suspect that Sir Oliver is better fitted to be the dancing master of another St. Medard.

All of these things, these ephemeral efforts, are nothing more or less than pandemic hysteria, but we shall go on with them for an indefinite period,—perhaps until someone throws a bucket of ice-water over our heads or gives us a hypodermic of apomorphine to change our channel of thought.

BOOK NOTICES

SYMPTOMS OF VISCERAL DISEASE. A Study of the Vegetative Nervous System in Its Relationship to Clinical Medicine. By Francis Marion Pottenger, A. M., M. D., LL. D., Medical Director, Pottenger Sanatorium for Diseases of the Lungs and Throat, Monrovia, California. Cloth, Price, \$4. Pp. 328, with 95 illustrations. St. Louis: C. V. Mosby Company, 1919.

Pottenger's "Symptoms of Visceral Disease" is a distinct contribution to American literature. It is a book worthy of study by the specialists of all branches, as well as the general practitioner.

It is an excellent résumé of the literature of the anatomy of the sympathetic and autonomic enervations. The personal observations of the author in their relations to clinical findings are a striking addition to our physical examination of patients. The "collar of degeneration" and "Hilus saucer" is an example of what I am alluding to.

We used to note the differences in the clavicular fossæ—the degeneration of the muscles of the shoulder girdle. He gives us excellent visceral reasons for these changes. We knew there were changes. He has made the reasons more clear.

The discussion of functional changes in glandular and muscular activity of smooth muscles is more or less a review of the endocrinologists of German, French, and English sources. The value of these chapters lies in their collection and chronological order.

—H. L. ULRICH.

THE MEDICAL CLINICS OF NORTH AMERICA. Volume III, Number 3. (The Mayo Clinic Number, November, 1919.) Octavo of 296 pages. Published bi-monthly. Price, per year, paper, \$10; cloth, \$14. Philadelphia and London: W. B. Saunders Company, 1919.

1. H. W. Woltmann reports a series of cases of facial paralysis due to a variety of causes with photographs and diagrams.

2. A description of a case of retinitis circinata is given by W. L. Benedict.

3. E. C. Kendall discusses the chemistry of the active constituent of the thyroid gland, and gives a few cases of thyroid deficiency treated by thyroxin.

4. The determination of the basal metabolic rate is considered as important in the diagnosis and treatment of thyroid diseases by W. M. Boothby as the temperature reading in febrile diseases. In hyperthyroidism it tells him what surgery is indicated. In myxedema it helps him to regulate the dose of thyroxin needed to maintain normal conditions.

5. F. A. Willius advises rest, full but stimulating diet, digitalis, and, occasionally, sedatives in tiding the patient with severe symptoms of hyperthyroidism over his most critical stage until it will be safe to operate on him.

6. How a difficult case of cardiospasm was dilated by introducing a hydrostatic dilator after the patient had swallowed some strong silk thread is described by P. P. Vinson.

7. G. B. Eusterman describes a case of syphilis of the stomach simulating carcinoma. The positive Wassermann gave a clue to the diagnosis, and the prompt response to antiluetic treatment established it. The gastric secretion and function came back to normal though the lesion remained demonstrable by the Röntgen ray.

8. Five cases of carcinoma of the pancreas are reported by R. D. Mussey, who considers the constant and steadily increasing pain, relieved little or not at all by the usual measures of alleviating upper abdominal pain, to be the most noteworthy characteristic of this disease. Four of the cases showed jaundice.

9. J. A. H. Magoun, Jr., reviews the cases found in literature of retroperitoneal tumors, and shows drawings and photomicrographs of two retroperitoneal fibromyomas which were diagnosed clinically as probable sarcomas.

10. Cancer of the prostate is treated by introducing needles of radium into the gland substance through the anesthetized perineum, to be retained twelve hours. Rectal and urethral applications are also made. Pain is relieved, size of tumor and rate of growth are decreased according to the records made by H. C. Bumpus.

11. Leda J. Stacy discusses the use of radium in

inoperable carcinoma of the uterus, and advises its use post-operatively in cases of pelvic carcinoma combined with x-ray treatment. The discomforts of nausea and vomiting due to a reaction and the dangers of vesico-vaginal and rectovaginal fistulae, are mentioned. Radium treatment offers the possibility of a clinical cure in inoperable cases, and promises at least temporary relief in practically all of these patients.

12. A case showing slight anemia, marked ascites, and splenomegaly was splenectomized, and died shortly afterwards. The history, symptoms, and blood-findings had been very difficult of interpretation until W. W. Bissell found at autopsy a primary portal thrombosis, with thrombi in the mesenteric branches, which unlocks the complicated clinical puzzle.

13. H. Z. Griffin reports four cases of tuberculosis of the spleen with anemia, in one of which an apparently permanent cure was brought about by splenectomy.

14. A case of anemia rapidly progressing to death without remission is described by A. Archibald. Features of both aplastic and of pernicious anemia were present.

15. Szlapka discusses splenectomy in pernicious anemia. The results have been extremely variable in the fifty splenectomized patients on record, and he says he has no way of deciding which case is favorable and which not.

16. After transfusion in patients without idiopathic blood disease, Winifred Ashby found that 80-60 per cent of the transfused corpuscles remained in the bloodstream on an average of thirty-one days.

17. A. H. Sanford gives the method of grouping blood for transfusion and also the technic of obtaining and giving citrated blood.

18. H. E. Marsh reports fifteen cases of polycythemia or erythemia seen at the Clinic since 1911. He considers venesection, benzol administration, x-ray and radium treatment of spleen and long bones to be of definite but transient value.

19. Lymphosarcoma, enlarged thymus, tuberculous glands, Pott's disease with abscess formation, have been found as causes of mediastinal pressure in children by W. S. Lemon. In adults tumors, cardiac conditions, and inflammatory masses are differentiated. X-ray plates are shown illustrating each.

20. E. H. Weld has made experimental studies in pyelography, and concludes that sodium bromide is non-toxic and is the most practical medium thus far produced for injection into the kidney.

21. Myocardial disease involving the subendocardial conducting tissue of the ventricle is discussed by F. A. Willius.

22. D. M. Berkman outlines the management of the diabetic diet after the patient has left the hospital.

23. A case of lepra with positive Wassermann reaction, three patients with neurosyphilis who have had intensive treatment; urticaria developing after influenza inoculation in a patient with other factors predisposing to dermatoses; the outbreak of interstitial keratitis in a child with hereditary syphilis after an attack of influenza are shown in the clinic of John H. Stokes. The necessity of prolonged and intensive treatment of syphilis by mercury intramuscularly and arsphenamin intravenously, and the importance of removing focal infections which may be a factor in increasing the symptoms or of delaying the cure is emphasized throughout the clinic.

OLGA S. HANSEN.

NEWS ITEMS

Dr. G. W. Hill has moved from Hill City to Wahkon.

Dr. W. C. Gulde has moved from Minneapolis to St. Cloud.

Dr. J. F. Quinn has moved from Mobridge, S. D., to Gregory, S. D.

Dr. F. B. Ricketts has moved from Peever, S. D., to Georgetown, Ind.

Dr. C. A. Walters has moved from Winnetoon, Neb., to Wood, S. D.

Dr. George W. Richards has moved from Clear Lake, S. D., to Watertown, S. D.

Dr. A. F. Branton, of Willmar, was married last week to Miss Helen I. Tomkins, of Mankato.

Dr. H. W. Goehrs, of St. Cloud, and Dr. Tolbert Watson, of Albany, have been attending clinics in Chicago.

Dr. Harry T. Frost, who has been doing post-graduate work in Chicago, has become a member of the Crookston Clinic at Crookston.

Dr. H. W. Hill, executive officer of the Minnesota Public Health Association, has resigned to take up his old work in London, Ontario.

Dr. Mabel Ulrich, of Minneapolis, has been reappointed by the mayor a member of the Board of Public Welfare for a term of four years.

Dr. P. M. Hall, superintendent of Minnesota Sanatorium for Consumptives, has returned after taking a course in the Trudeau school at Saranac Lake, N. Y.

Dr. Cephas Swanson has moved from St. Hilaire to Minneapolis. Dr. Swanson is a graduate of the Medical School of the State University, class of '07.

Dr. Julius C. Fitch, of Hastings, died last month at the age of 78. Dr. Fitch graduated from Rush in 1866, and had practiced in Hastings about fifty years.

Dr. F. P. Silvernale, who has just finished his internship at the City and County Hospital of St. Paul, has become associated with the Sivertsen Clinic of Minneapolis.

Dr. A. A. Law, of Minneapolis, who had charge of Base Hospital No. 25 at Allery, France, has been traveling in France for some weeks, and is expected home this week.

Dr. Bernard Sorose, a graduate of the Medical School of the University of Minnesota, class of

1919, who has completed a year's work in St. Barnabas Hospital, has located in Barnesville.

Dr. W. G. Ground, of Superior, Wis., read a paper at a recent meeting of the Interurban Academy of Medicine at Duluth, on cancer, giving its history and the progress of its treatment.

A two-day conference of the public-health workers of South Dakota was held in Madison, S. D., last month. Distinguished speakers from all parts of the state and from other states gave addresses.

Dr. Iver F. Selleseth, who recently returned to Minneapolis after two and a half years' work in orthopedic surgery in the army and in the clinics of Philadelphia and Boston, is now located in the Donaldson building. He will confine his work in orthopedic surgery.

Dr. F. E. Harrington, health commissioner of Minneapolis, has asked the Board of Public Welfare for five inspectors for 1921, whose sole duty shall be to inspect the health conditions of the factories of the city, to look after the infant welfare of the city, and to care for all incipient cases of tuberculosis in the city.

The Huron (S. D.) District Medical Society met on July 1 in Huron. Papers were presented as follows: "Venereal Disease Control in South Dakota," by Dr. Sherman Lull, Waubay; "Venereal Disease in the Female," by Dr. Percy Peabody, Webster; and "Venereal Disease in the Male," by Dr. O. R. Wright, Huron.

A school for backward and nervous children, known as the "Baker-Bartholomew School," will open in Minneapolis on September 1 under exceedingly favorable auspices. Its medical advisors are Dr. W. A. Jones, editor of THE JOURNAL-LANCET, and his associate, Dr. Bruce W. Jarvis. The need for such a school is a very urgent one.

The Sioux Valley Medical Association held its twenty-fifth annual meeting in Sioux Falls, S. D., last month, with a good attendance. The following officers were elected: President, Dr. A. E. Jenkinson, Sioux City, Ia.; first vice-president, Dr. C. L. Sherman, Luverne, Minn.; second vice-president, Dr. Goldie Zimmerman, Sioux Falls, S. D.; secretary, Dr. J. A. Dale, Sioux City, Iowa; treasurer, Dr. W. R. Brown, Sheldon, Iowa.

The department of Hillcrest Hospital, Minneapolis, in charge of the radium treatment in surgical and medical cases, has decided to give treatment, when requested, in any of the hospitals

of the city in conjunction with the physician or surgeon in charge of cases treated. It is, we believe, the custom to confine the use of radium to the hospital where the radium is owned. This departure is highly commendable, for few hospitals can incur the large cost of radium.

Dr. Howard Lankester, of St. Paul, died in Milwaukee on July 30 at the age of 74. Dr. Lancaster came from England to America in 1877, and came to St. Paul from Grand Forks, N. D., in 1895. He was associated with Dr. Alex. J. Stone for some years, and was associate editor of THE JOURNAL-LANCET for one year. He was Health Commissioner of St. Paul for several years, and was prominent in many fraternal organizations. He was a genial and highly respected man—a real character in medical circles, known to everyone on the streets of St. Paul by his long flowing white beard.

The American College of Surgeons is planning to hold district or state gatherings to bring its members together for clinics in such sections. An executive committee to plan for such a meeting was elected by the South Dakota members of the College last week, consisting of Dr. R. Alway (Aberdeen), Dr. F. A. Spafford (Flandreau), and Dr. C. E. McCauley (Aberdeen). A like committee for Minnesota has also been appointed, as follows: Dr. Thomas McDavitt (St. Paul), Dr. A. T. Mann (Minneapolis), and Dr. C. H. Mayo (Rochester).

HENNEPIN COUNTY TUBERCULOSIS ASSOCIATION

Federation of the eight volunteer public health agencies of Hennepin County and Minneapolis was recently effected, and the new organization will incorporate as the Hennepin County Public Health Association. Agencies composing the federation are the Hennepin County Tuberculosis Association, the Hennepin County Medical Society, the Infant Welfare Society, the Visiting Nurse Association, the committee on nursing activities of the Minneapolis Chapter of the Red Cross, the Minneapolis Council of Social Agencies, the committee on public health of the Civic and Commerce Association, and the Minneapolis District Dental Society. Officers of the new association are T. J. Gerould, president; Dr. E. J. Huenekens, vice-president; Mrs. F. A. Chamberlain, secretary and treasurer. Otto F. Bradley, executive officer; Dr. F. E. Harrington, city health commissioner and director of social hygiene; Dr. Walter E. List, superintendent of city hospitals, and Dr. Mabel S. Ulrich, chairman of the public health committee of the Minne-

apolis Board of Public Welfare, are members ex officio of the central administrative board, on which each member organization has two representatives.

The establishment of a health center, where offices of all health agencies of the county, including the Minneapolis Health Department, can be housed together, is one of the main purposes of the federation. In general, the object sought is the correlation of all public health activities and social activities bearing on public health, with resulting elimination of overlapping in effort and expenditure of funds.

Special public health projects already planned by the Association include public education in the cure and prevention of cancer, the establishment of nutritional clinics for children under school age, municipal dental clinics, education in oral hygiene, and the promotion of open-air schools.

Members of the administrative board representing the eight agencies are as follows: Dr. J. C. Litzenberg and Dr. George D. Haggard, Hennepin County Medical Society; Dr. H. L. Ulrich and J. T. Gerould, Hennepin County Tuberculosis Association; Dr. E. J. Huenekens and B. H. Woodworth, Infant Welfare Society; Dr. H. W. Cook and James D. Shearer, Civic and Commerce Association; Dr. Elmer S. Best and Dr. W. H. Card, Minneapolis District Dental Society; Mrs. Thomas S. Roberts and Mrs. D. P. Jones, Visiting Nurse Association; Mrs. F. A. Chamberlain and E. C. Gale, Red Cross; E. W. Olson, superintendent of the Swedish Hospital, and Frank J. Bruno, secretary of the Associated Charities, delegates of the Council of Social Agencies.

PHYSICIANS LICENSED TO PRACTICE IN NORTH DAKOTA

AT THE JUNE (1920) EXAMINATION

ON EXAMINATION

Link, John Joseph Bismarck
Parker, Leon Vasco Minot
Parker, Rollingford M. Portal
Panek, Adam F. Milton
Paxman, Dalton Gordon. Hamilton
Ternstrom, Oscar H. Bismarck
Wolfram, Philip H. Chicago

BY RECIPROCITY

Bradley, William Charles Marion
Cowin, Carl C. Minneapolis
Desmond, Michael A. Fargo
Flaten, Amon P. Edinburg
Larsen, G. Arthur Fargo

Oftedal, Trygve Fargo
Westervelt, Alfred E. Bowdon
Woodward, Floyd O. Jamestown

PHYSICIANS LICENSED TO PRACTICE IN MINNESOTA

AT THE APRIL (1920) EXAMINATION

BY EXAMINATION

Appleby, John I. U. of Minn., 1920
Anderson, David D. U. of Minn., 1920
Anderson, Frank J. U. of Minn., 1917
Arvidson, Carl G. U. of Minn., 1920
Badger, Lucius F. U. of Minn., 1920
Benjamin, Walter G. U. of Minn., 1920
Blaustone, Henry H. U. of Minn., 1920
Borgeson, Egbert J. U. of Minn., 1918
Branton, Alloys F. U. of Minn., 1920
Cantwell, William F. U. of Minn., 1920
Christianson, Harry W. U. of Minn., 1920
Countryman, Roger S. U. of Minn., 1920
Crow, Earl R. U. of Minn., 1920
Crowl, Verne C. U. of Minn., 1920
Culligan, John M. U. of Minn., 1920
Curtin, Jonn F. Harvard, 1915
Daniels, Harry A. U. of Minn., 1920
Doyle, George C. U. of Minn., 1920
Doyle, Lawrence O. U. of Minn., 1920
Flagstad, Albert E. U. of Minn., 1926
Flores, Miguel A. U. of Penn., 1918
Ford, Frances A. U. of Minn., 1920
Fowler, L. H. U. of Minn., 1920
Gault, Charles C. U. of Minn., 1920
Gunderson, Nels A. U. of Minn., 1920
Henry, Myron O. U. of Minn., 1920
Hoffman, Max H. U. of Minn., 1920
Holley, Wm. H. W. U. of Minn., 1917
Hultkrans, Joel C. U. of Minn., 1920
Hutchinson, Charles J. U. of Minn., 1917
Jackson, Arnold S. Columbia, 1919
Johnson, Ellsworth J. U. of Minn., 1920
Juergens, Herman M. U. of Minn., 1920
Kadesky, David U. of Minn., 1918
Kinsman, Frank C. U. of Minn., 1920
Larson, Leroy J. U. of Minn., 1920
Lundholm, Arthur M. U. of Minn., 1920
Mahowald, Aloys St. Louis U., 1920
Mayer, Lillian M. U. of Minn., 1920
Mills, John L. U. of Minn., 1920
Miners, George A. U. of Minn., 1920
Moersch, Herman J. U. of Minn., 1920
Morris, Ernest H. U. of Neb., 1919
Muller, Rudolph T. U. of Minn., 1920
Nannestad, Rolf F. U. of Minn., 1920

Norrgard, Henry T.....U. of Minn., 1920
 Pederson, Arthur H.....U. of Minn., 1920
 Peterson, Willard C.....U. of Minn., 1920
 Platou, Erling S.....U. of Minn., 1920
 Ryan, Mark E.....U. of Minn., 1920
 Robinson, Byron L.....U. of Minn., 1920
 Rosenholtz, Burton.....U. of Minn., 1920
 Salt, Clifford G.....U. of Minn., 1920
 Seaberg, John A.....Northwestern, 1920
 Steffens, Leon A.....U. of Minn., 1920
 Stratte, Harold C.....U. of Minn., 1920
 Strong, Geo. F.....U. of Minn., 1920
 Sullivan, Raymond M.....U. of Minn., 1920
 Vik, Arthur E.....U. of Minn., 1920
 Widen, Wilford F.....U. of Minn., 1920
 Zanger, Henry G.....U. of Minn., 1920

BY RECIPROCITY

Bell, Charles C.....Rush, 1919
 Davis, Benjamin F.....Rush, 1912
 Gibson, Paul E.....U. of Iowa, 1919
 Grigsby, Roll O.....Rush, 1916
 Hall, Cluley C.....U. of Iowa, 1919
 Hartman, Howard R.....U. of Mich., 1914
 Schulberg, Peter A.....U. of Ill., 1914
 Smith, Cyril McN.....Northwestern, 1918

LICENSED UNDER THE LAWS OF 1919

(OVERSEAS SERVICE SIX

MONTHS OR MORE)

Allison, Robert G.....U. of Maryland, 1912
 Chaney, Ralph H.....U. of Penn., 1914
 De Tuncq, George P.....Hah. Chicago, 1917
 Elliott, Leo L.....Geo. Wash. U., D. C., 1910
 Garrison, Herbert T.....Bennett, 1915
 Grove, Arthur F.....U. of Ill., 1910
 Hundling, Herman W.....U. of Ia., 1915
 Leonard, Veader N.....Johns Hopkins, 1911
 Levinthal, Daniel H. Chi. Coll. Med. & Surg., 1917
 Linhardt, Oscar V. N.....U. of Maryland, 1915
 Mackedon, Thomas E.....Marquette, 1913
 Mastin, Edward V. M.....U. of Penn., 1916
 Murphy, Walter W.....Northwestern, 1911
 Myre, Stanley L.....Marquette, 1915
 Parker, Bennett R.....Rush, 1916
 Rankin, Fred W.....U. of Maryland, 1909
 Sayers, Frank E.....U. of Mich., 1913
 Schlesselman, Geo. H....Hahnemann, Chi., 1913
 Wagener, Henry P. Med. Coll. So. Carolina, 1913

OFFICE POSITION WANTED BY GIRL

Has had one year's training in nurses' course at St. Mary's Hospital, and one year in office of an eye specialist. Can do typewriting and keep books. Lives at home. Address 375, care of this office.

RED RIVER VALLEY PRACTICE FOR SALE

Cash receipts for 1919, \$6,000. Nearest competition, 9 miles. Good schools. Practice given to purchaser of office building. Will also sell fine residence property if desired. Address 374, care of this office.

OFFICE POSITIONS WANTED

Two girls who have just graduated from the Hill Crest Hospital Nurses Training School desire positions in physicians' office. Can do routine laboratory work. Address 362, care of this office.

PRACTICE FOR SALE IN MINNESOTA

An unopposed village and county practice of over \$4,000 yearly, near Twin Cities. I am moving to another state. Collections, 99 per cent. Introduction. Price, \$500 cash, which includes office chairs and a few other articles. Surgeon can make more. Address 367.

WANTS TO PURCHASE A GOOD PRACTICE

A young surgeon, who owns a \$11,000 home in St. Paul, wishes to go to a moderate-sized country town with hospital or hospital opportunities in the Northwest. Will trade his home or buy practice. Address 369, care of this office.

LOCATION OR AFFILIATION WANTED

A young physician with considerable surgical experience, who has spent the past year since leaving war service in a surgical hospital, seeks an affiliation with a good man in the country or will buy a country practice. Address 350, care of this office.

MINNEAPOLIS OFFICES FOR RENT

Desirable offices for rent in a good location in Minneapolis for physicians, surgeons, and dentists at the corner of Franklin and Bloomington Aves. Address 371, care of this office, or telephone Geneva 4110.

SPECIAL TECHNICIAN FOR INTRAVENOUS WORK

A technician, whose specialty is intravenous work, offers her services, by the hour or case, to Twin City physicians. Has administered salvarsan over a thousand times. For information and terms, address 369, care of this office.

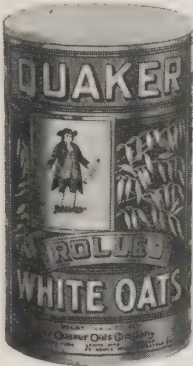
PRACTICE FOR SALE

Unopposed North Dakota \$6,000 practice. Good roads, good schools, new house with hot water heat, bath, shower, electric lights and big garage; large territory; only physician; main line Northern Pacific; railroad surgeon, transferrable. Will sell for price of property. Satisfactory terms, and will introduce new man. Going to specialize. Address 370, care of this office.

PRACTICE FOR SALE

An unopposed village and county practice of over \$5,000 in Minnesota near the Twin Cities. Includes office equipment, stock of medicine, instruments, and two young horses. Collections, 99 per cent. Will give introduction. Reasonable terms. Going to Europe. Address 373, care of this office.

The Cost of Calories



6,221 calories 35 cents

A large package of Quaker Oats contains 6221 calories. It will make 60 dishes. And it costs 5½ cents per 1,000 calories.

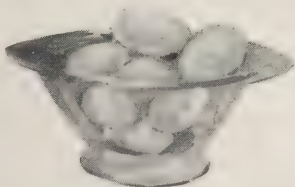
On the calory basis, meats, eggs, fish, etc., cost nine or ten times as much.

One chop costs as much as 12 dishes Quaker Oats. One egg would buy several dishes.

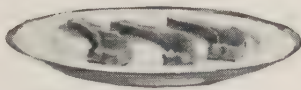
Yet the oat is almost the ideal food. In balance and completeness it's the greatest food that grows.

A Quaker Oats breakfast means better feeding. And it means a saving which will help buy costlier foods for dinner.

Note how other good foods compare in cost, at this writing, on the calory basis:



500 calories 30 cents



700 calories 35 cents

Cost per 1,000 calories

Quaker Oats	- - - -	5½c
Average Meats	- - - -	45c
Hen's Eggs	- - - -	60c
Chicken up to	- - - -	\$1.66

Quaker Oats

Made to make the oat dish doubly delightful. Flaked from queen grains only—just the rich, plump, flavorful oats. We get but ten pounds from a bushel, yet it costs no extra price.

The Quaker Oats Company

Chicago

MERCURIAL (GREY) OIL - \$1.50

One of the New and Nonofficial Remedies. A valuable adjunct in the treatment of syphilis. Put up in syringes, each syringe containing ten doses. Credit of 50c upon return of syringe. Pamphlet sent upon request.

WASSERMANN TEST (Blood or Spinal Fluid) - - - - - \$5.00

We do the classical Wassermann test. Specimens sent in by 10 a. m. reported the same day. We have run over forty thousand Wassermans in our laboratories. Reliability and accuracy depend on personal equation and method of operator. We run each Wassermann in triplicate, thus avoiding an error should we depend on one run only. Sterile containers, with needle, gratis upon request.

PASTEUR'S ANTI-RABIC VIRUS

Full Course Treatment - - \$25.00

As improved and made by DR. D. L. HARRIS, St. Louis, Mo. U. S. Government License 66.

The treatment is so stable that it can be shipped anywhere and kept any reasonable length of time without loss of immunizing value. Immunity is established earlier and last longer with the Harris method than by the old Pasteur method. By this method a virus of constant and known potency is used and dosage can be accurately determined.

Telegraph orders given prompt attention.

EXAMINATION OF PATHOLOGICAL TISSUE - - - - - \$5.00

Accurate histological descriptions and diagnoses of tissues removed at operation should be part of the clinical record of all patients.

AUTOGENOUS VACCINES - \$5.00

We culture all specimen aerobically and anaerobically and isolate the offending organisms. Pipettes for collecting material for autogenous vaccines sent upon request.

NATIONAL PATHOLOGICAL LABORATORIES

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DETROIT
Peter Smith Bldg.

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University Club Bldg.

NEW YORK
18 East 41st St.

**The
Management
of an
Infant's Diet**

**A Temporary Diet
in
Summer Diarrhea**

Mellin's Food . . . 4 level tablespoonfuls
Water (boiled, then cooled) 16 fluidounces

To be given in small amounts at frequent intervals.

Each ounce of this mixture has a food value of 6.2 Calories and furnishes immediately available nutrition well suited to spare the body-protein, to prevent a rapid loss of weight, to resist the activity of putrefactive bacteria, and to favor a retention of fluids and salts in the body tissues.

MELLIN'S FOOD COMPANY,

BOSTON, MASS.

PUBLISHER'S DEPARTMENT

LISTERINE

Listerine is one of the few products that the medical profession, as well as their patients, has held onto for a great many years, using it almost daily and finding it so agreeable that no newcomer can crowd it out. And why? Because it is an agreeable, indeed, a delightful, deodorizing, antiseptic lotion, grateful and healing to the mucous membrane of the nose, mouth, and throat, and is absolutely free from poisoning effects.

"Listerine" will long be a household word, and the physician who prescribes it says, in substance, to his patient: "It is an aid to nature, and with its aid nature will all the more readily cure you."

C. V. MOSBY COMPANY

The C. V. Mosby Company, medical book publishers of St. Louis, Mo., has done the medical profession of the West a service of inestimable value by its recognition of the value of the profession's medical literature and by the publication of the same in book form, which at one time was a hazardous business enterprise.

The excellent form in which their books were put out and the large demand for them soon led Eastern authors to tender their manuscripts to the Mosby Company, so that today the company publishes much of the best medical literature of the country. Their announcements in our advertising columns are worth watching. One of their latest books is by Dr. Israel Bram, of the Jefferson Medical College, and is on the non-surgical treatment of exophthalmic goiter.

METABOLISM STUDIES IN DERMATOLOGY

Most dermatological lesions have an internal disturbance as an underlying basis. There may be a faulty metabolism of carbohydrates or proteins or a disfunction of the glands of internal secretion.

For an accurate diagnosis chemical analysis of the blood and sensitization tests with proteins of food, of bacteria, of dander and of pollens, are often necessary.

While all routine, as well as the more complicated diagnostic measures receive equal attention at the Minneapolis Diagnostic Institute, disturbances of metabolism are featured. Several local physicians who had patients with stubborn skin lesions report their reputation as successful therapeutists was increased after calling upon Dr. I. J. Murphy to assist in making an accurate diagnosis.

THE BEEBE LABORATORIES, INC.

Much is always to be said in favor of a pioneer worker in any line who keeps pace with the progress of the work in which he started as a pioneer, for the tendency is to fall behind in this respect and rely upon one's prestige. Dr. Beebe, of St. Paul, was a pioneer public laboratory man, and he has made good use of his early start in this professional, scientific line, for he has permitted no one to get ahead of him in devotion to his work or in modern methods. His laboratory renders service, indeed high-grade service; and he invites medical men to call at his laboratories when in

St. Paul, or to write him in regard to what service he can render them.

The Beebe Laboratories now have a branch in Kansas City, thus rendering quicker service to men in that territory.

MUDCURA SANITARIUM

The valley of the Minnesota River for a few miles above Fort Snelling, where this river empties into the Mississippi, has become famous for its beautiful scenery and for its sulphur mud baths. The curative power of the water and the mud around Shakopee was never known fully until Dr. H. P. Fisher of that place erected a modern hotel as a sanitarium where the mud baths could be given under proper conditions.

This building is thoroughly modern and is situated in a beautiful park. Here Dr. Fisher and a competent staff have made the administration of mud baths agreeable and effective, and his sanitarium has become a popular resort for both physicians and their patients in need of rest and a restoration of their lagging powers of assimilation.

Ask Dr. Fisher for his booklet on the Sanitarium and mud baths.

NOYES BROS. & CUTLER, INC.

A very pretty story, with a lesson for all of us, was told of Mr. Higginson at the time of his death, which recently occurred in Boston. He was called Boston's first citizen. He established and supported for many years Boston's great symphony orchestra, and was highly honored by that city.

A business man once approached Mr. Higginson, greatly agitated, and said: "Mr. Higginson, I have always supposed you to be an honest man." Before he could proceed farther, Mr. Higginson said: "You have supposed nothing of the kind; you have *known* it."

The story reminds us of the honored founder of the house of Noyes Bros. & Cutler, the late Mr. Daniel R. Noyes, and of the house itself, whose motto is "The dependable house of service," and no service can be based upon anything but integrity.

This old-established house carries everything needed by physicians, surgeons, hospitals, and the specialists; and "you know" it is honest.

STILL ROCK SPA

The early success of the treatment of diabetes and Bright's disease at Still Rock Spa (Waukesha, Wis.) was notable, and today a splendidly equipped 100-room hotel is required to care for the patients who seek relief from these diseases.

All the comforts of a modern city hotel are found at this hospital, with splendid grounds for exercise on a large scale. The dietary is the best possible, consistent with the requirements of modern treatment, and the two resident physicians are experts in the two diseases in which they have specialized for years. Dr. A. J. Hodgson, the Medical Director, is a Rush man, and his associate, Dr. W. E. Nicely, is a University of Pennsylvania graduate; and both are men of long experience.

THE N. P. BENSON OPTICAL COMPANY

Though a comparatively new organization, the Benson Optical Company of Minneapolis was started by a man, Mr. Benson, who had been the practical man in one of the largest optical houses in the country, and he brought to the new business, practically his own, an

enthusiasm and a capacity that accomplish results. He said, "I will give the physicians of the Northwest service," and "I will also give them value." These two things the Benson Company is doing, and they ask the opportunity to serve our readers. A trial, we are sure, will give our readers evidence that their interests will be looked after in a manner that will please.

The Company has branches in Duluth and Aberdeen.

THE ESTABLISHMENT OF A PRIVATE SCHOOL FOR BACKWARD AND NERVOUS CHILDREN

The absence in the Northwest, almost total, of private schools for backward and nervous children is a serious, indeed a lamentable, fact; and the medical profession, we are sure, will be glad to hear of the establishment in Minneapolis of such a school under conditions that insure eminent success for it.

This school will be open on September 1, and will be known as the "Baker-Bartholomew School for Backward and Nervous Children." Its promoters are Mr. J. J. Baker, manager of the Minneapolis Sanitarium, and Miss Nell Bartholomew, who has been an instructor in public and private schools of this character for a number of years, and is highly endorsed for her past successful work by men eminent in this particular field.

So great is the need for such a school and so well qualified are the promoters of the new school that Dr. W. A. Jones, the editor of this paper, and his associate, Dr. Bruce W. Jarvis, have consented to become its medical advisors, and thus give their endorsement to the project.

A fine residence building, with ample grounds, in a quiet section of the city, has been purchased for the school, which will open for pupils September 1.

The school's announcement appears on another page, and physicians will do well to make its purpose known to their patients who have children requiring such care and instruction.

ALKALOL

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THE TREATMENT OF SYPHILIS

A very valuable and interesting work has just been published by The Macmillan Company, New York. It is entitled, "The Treatment of Syphilis," and is from the pen of H. Sheridan Baketel, A. M., M. D. The volume covers very thoroughly and convincingly the field of intravenous and intramuscular medication, and the administration of arsphenamine or neoarsphenamine. It gives in minutiae, step by step, the proper methods for the actual introduction of arsenical products into the system.

Speaking of the after treatment in cases where intramuscular injections have been given, the author says:

"In England and on the Continent it is the habit, after giving an intramuscular injection, to cover the surrounding parts with sterilized absorbent cotton fixed with elastic collodion. The patients were instructed to rest in bed for twenty-four hours, and, according to various reports, the majority of them complained only of stiffness in the hip and thigh and occasionally of pain in the lower extremity.

"Some physicians also utilize a clay dressing, like antiphlogistine, in place of cotton. It is their custom to cover the entire gluteal surface with a thick layer of properly heated antiphlogistine and to cover this with gauze, and over that absorbent cotton. This application seems to work well fol-

lowing the intramuscular injection, and not only aids in the prevention of pain and to a considerable extent prevents any abscess formation, but enables the patient to attend to his ordinary affairs."

Dr. Baketel is Professor of Preventive Medicine and Hygiene and Lecturer on Genito-Urinary Diseases and Syphilis in the Long Island College Hospital, Brooklyn, N. Y.; Attending Syphilologist and Chief of Clinics at Volunteer Hospital, New York; Genito-Urinary Surgeon to the House of Relief of the New York Hospital; Lt. Col., Medical Reserve Corps, U. S. Army, etc., etc.

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ANKYLOSIS OF THE JAW*

BY HARRY P. RITCHIE, M. D.,

Associate Professor of Surgery, University of Minnesota Medical School

SAINT PAUL

The subject of ankylosis of the jaw is comprehensively covered in the literature, notably by Blair, Henderson, and New, while the late J. B. Murphy made it the theme for several monographs.

The diagnosis and treatment are gradually becoming standardized, yet the cursory reader may be misled by one or two debatable points in the technical features of the operative repair; therefore a brief review may be of interest.

In 1914 Blair reported an analysis of about 200 cases collected over a period of fifty or sixty years from both foreign and American periodicals. In 1918 Henderson and New reported 23 cases from the Mayo Clinic, while scattered through the files are quite a number of reports like this based upon experience of the reporters in two or three cases.

The striking comment of all writers is the extraordinary time which the patients have carried their disability,—some eight years and even longer,—and it seems to be a fair conclusion that knowledge of the condition and its operative repair is not well known amongst members of the profession. It was the experience of Dr. Daugherty and myself that we had paid but little attention to it until our first case appeared, when, in reviewing the literature, we found, to our surprise, that every feature of the condition had been elaborately discussed.

Based upon this review, the following state-

ments may be considered as approximately correct:

1. *The frequency* of the condition is not great, although more than is apparent because many cases do not find their way into the literature.

2. *The occurrence* is possible at any time of life, but more usually its inception, at least, is in the early years of life in and around puberty.

3. *Fixation* of the jaw in occlusion follows involvement of the temporomaxillary joint or the contracture of the fascia about the joint, particularly of the muscles, masseter, temporal, or pterygoids; therefore this may be readily considered as *articular* and *extra-articular*.

4. *Infection* and *traumatism* divide the primary cause, Blair saying equally, while Henderson and New prove that infection has a large percentage over traumatism.

Traumatism as a cause is, of course, covered by blows and kicks on the chin.

Infection may find its way to the joint by—

a. Inflammatory involvement of contiguous structures, namely, middle ear, parotids, tonsils, dental abscesses.

b. Metastatic involvement, as any other joint in the body may be affected.

c. The exanthemata.

5. *Unilateral involvement* seems to be most frequent, but sufficient percentage of cases show bilateral fixation to bring this consideration into every case. Under circumstances of late involvement the location may be very difficult; in fact, there are several cases reported by very eminent surgeons who have frankly confessed to having

*Presented before the Southern Minnesota Medical Association June 28-29, at Fairmont, Minnesota.

operated on the wrong joint, so that he is a wise surgeon who prepares his patient for an attack on both joints at the same sitting or as a follow-up operation.

THE DIAGNOSIS

When the joint is affected during the formative period of life and sufficient time has elapsed, a characteristic deformity is produced, which forms the basis for diagnosis in every case, although at times in later life the evidence may be practically negligible.

a. The joint being inflamed is thereby limited in motion. If the epiphysis, from which the length of the ramus is derived, is involved, its growth is thereby inhibited resulting in a far shorter bone. The opposite ramus attains its normal growth.

trouble, but, as I have already mentioned, the condition may be bilateral, or if the condition begins in later life when the ramus has attained its full growth, the problem may be very confusing; this, however, should only add to the interest and care in the solution.

The surgical considerations are as follows:

1. The possibility of bilateral involvement plus the combination of articular and extra-articular cause.

2. The difficulty of anesthesia given with a jaw fixed in occlusion; therefore the patient must be brought to operation with an empty stomach on account of the possible aspiration of fluids. Many operators prepare for an emergency tracheotomy.

3. Experience has shown that, in inflamma-



1. Showing the tilting of the lower jaw towards the affected side in the young, and the absence of this feature in the adult.

b. The muscles on the affected side, by reason of the spasm and effort to protect the joint and later, in the attempt to move the joint, preserve some part of their form and function, while the muscles of the normal side, lacking use, have a tendency to atrophy.

This combination of shorter bone and more rounded muscles, on the one side, and, on the other side, the longer bone and thin muscles, leads to an apparent tilting of the lower jaw upwards toward the fixed joint, with a fuller and more rounded aspect, while on the side of the normal joint the effect is of a toboggan-slide, straight-line face. When some motion is present the excursion of the mentum on occlusion is towards the affected side.

Therefore when all of these points are present one should not go wrong on the location of the

tion covering a period of years, and especially in older patients, the bone becomes eburnated to an extraordinary degree of density, making the attack upon what seems to be a comparatively superficial joint a most difficult undertaking; therefore it is well to prepare one's self with several groups of instruments,—chisels, saws, and burrs,—because, it is our experience, this operation is not to be lightly undertaken and may develop into a distinctly major procedure.

4. By reason of the shallow shape of the joint and the rather delicate structure of the zygoma, there is no chance to obtain a movable joint or normally to reconstruct it, and the aim and purpose is to create a false joint either by removal of the head or section of the neck of the ramus.

5. The anatomical points to be considered are the following:

a. *The external temporal artery.*

This being a superficial structure it can be easily controlled if necessary; ordinarily it can be avoided, but no penalty results if it be destroyed.

b. *The seventh nerve.*

This is of the greatest importance, and the skin incisions and the avenue of attack are most definitely influenced by the necessity of its avoidance.

c. *The internal maxillary artery.*



2. Anatomical drawing of the operative field.

As this artery lies deep on the inner side of the ramus, it cannot be injured without severe complications. Several cases are on record where it was necessary to tie the carotid, and in a few cases it has been satisfactorily controlled in the wound, but its rupture is one of the serious complications of the operation, and every care must be taken to preserve it. Handicapped by an inadequate incision and by eburnated bone, in an ever-narrowing field at the bottom of which is a large artery, the operation offers complications quite formidable. Yet all these possibilities should in no way deter one from the attempt, especially in the young, who, lacking the very important function of mastication and handicapped in the selection of foods, must pay a very great penalty in their nutritional development and be denied many of the pleasures attending thereon.

The aspects of the operation.—The procedures, even in more recent papers, are materially influenced by the suggestions of the late J. B. Murphy, who, over many years of work, elaborated the principle of interposition of fascial reflections on joint surfaces as presenting the best chance of obtaining permanent motility.

Experience has shown that the limitations of these reflections are narrower than suggested by him, but that under certain circumstances it is an accepted method and of proven efficiency.

Its application to this condition consists in turning down a flap from the fascia of the temporal muscle with its base on the zygoma, placed and fixed into the hiatus created by the section of the neck of the ramus. Dr. Daugherty and I were impressed with the belief that the success of the operation depended upon the exact accomplishment of this step.



3. The incisions suggested for approach to the joint. (First figure, the Murphy incision; second figure, the Straight-line and the New incisions.)

In our first case the flap was made too short, and in extending the dissection it was pulled off of its attachment, and, naturally, we thought that the success of the operation was thereby defeated. The detached fascia, however, was sutured into place, but was extruded on the fifth day, so that we have every reason to believe that it exercised nothing more than a deleterious effect upon the case.

In the second case, by reason of experience, the flap was cut widely, turned, and sutured in place firmly and satisfactorily to us. The wound healed primarily, and we have every reason to believe that the flap is in place and exercising its supposed function. Therefore we have two cases: one without the flap and one with the flap, and by inspection of the photographs it may be seen that the end-results are equally complete.

Two cases furnish rather slim evidence upon which to base a statement were it not that a similar conclusion has been reached elsewhere, especially by Henderson and New, who, I believe, were the first to debate the necessity of the flap.

If the flap is not necessary the steps of the operation are distinctly simplified. The incision of the skin may follow almost a straight line—along the external temporal artery, and the neck of the bone may be sectioned or the head removed in any way selected.

In the reports of earlier writers recurrences of the condition were not uncommon, and this fact, no doubt, led to the suggestion of the fascial interposition.



4. The first two figures show the end-result of operation; the third figure shows the condition after three weeks of non-operative treatment (compare with photo in Fig. 1).

Explanation of failure can be attributed reasonably to the fact that the importance of after-care was minimized or entirely neglected. With or without the flap, this follow-up attention is now considered of importance equal to the operation. This is founded upon the observation that continual motion of the false joint is essential during waking hours and that in sleep the surfaces of the sectioned bone should never be apposed in occlusion for any length of time. This latter state may be obtained by wearing a rubber gag inserted upon the affected side and worn during the night. At first this is a hardship but the patient readily becomes accustomed to it. This

treatment must be carried on for an arbitrary period of six months.

In any case where it can be proven that the joint has been injured or inflamed the chances are that, sometime during the life of the patient, the jaw will become limited in motion or fixed and consequently require operative repair. But in cases where the evidence points to inflammations about the joint it seems reasonable to offer the method of daily motion, and nocturnal gag as preliminary treatment if the patient can be brought under direct control. Two such cases are now under observation, making what appears to be satisfactory progress.

The successful repair of such conditions appeals to me as being an example of the highest class of reconstructive surgery.

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DISCUSSION

DR. GORDON B. NEW (Rochester, Minn.): It is rather late to discuss Dr. Ritchie's paper fully, and I simply wish to emphasize two points: first, the side of the face on which the jaw is involved in cases in which the condition has developed before the child is fully grown appears fuller and shorter than the other side of the face; the side that appears atrophied and flatter is the normal side because that side of the jaw extends across the midline.

Regarding the anatomy, or the location of the joint in these cases in which there is the usual deformity: The joint is very low and not in the usual position of the normally developed skull, and it is in these cases that it is necessary to approach the joint by taking off the lower portion of the zygoma, as pointed out by Dr. Henderson and me in a recent paper. The direct approach on the joint in this group of cases is not possible on account of the position of the facial nerve.

Several years ago Dr. Murphy brought out the use of fascia to interpose in the joint. We have operated on about thirty patients, using the simple technic we described two years ago without interposing any tissue in the new joint, and we have obtained uniformly successful results.

TREATMENT OF ACUTE SEPTIC ARTHRITIS WILLEMS' METHOD*

BY JOS. VAN DE VELDE, M. D.

LA PANNE, BELGIUM

Acute septic arthritis may be classified from an etiologic point of view in three groups:

1. Traumatic arthritis where pyogenic bacteria get their entrance into the joint through laceration or puncture by a foreign body or by surgical operation.

2. Arthritis resulting from adjacent foci of infection, such as bursitis, lymphangitis, infected wounds, or a suppurative process in the extremity of an adjacent bone.

3. Arthritis complicating a general infection where the pyogenic bacteria are brought into the joint through the blood-stream.

With the exception of the cases where the infection is transmitted to the joint from an infected focus of an adjacent bone, Willems' Method may be used successfully in any case of these three groups.

The most common types of bacteria found in acute purulent arthritis are streptococci and staphylococci. Gonococci, bacillus coli communis, and pneumococci are also occasionally present.

Pneumococcic arthritis occurs generally as a complication of pneumonia in children. For this reason it will be found difficult to use Willems' Method in the treatment of those lesions. Bacilli coli communes are rarely found in acute arthritis. We have had no experience with such cases. Gonococcic arthritis is generally associated with peri-arthritis, which, as we shall see later, is a condition unfavorable for active mobilization. Streptococci and staphylococci are the organisms with which we generally have to deal in acute infections of the joints. In arthritis following an injury these two types of bacteria will very frequently be found associated. In any other condition, the infection will be due to one of them, but after being opened the second type may develop in the wound if it is not properly treated. It has often been demonstrated that the subjoining infection comes from the surrounding skin uncleanly kept.

The study of the pathology of any kind of acute arthritis shows the following evolution: The synovial membrane is the first location of the pathogenic organisms; it becomes thickened, and the joint fills with pus. This condition is the so-called "abscess of the joint," the fluid

being walled off by the thickened capsula. In a second stage the ligaments become inflamed, and the extension of the infection gives the clinical picture of the so-called "parasynovitis." Simultaneously the capsula becomes gradually destroyed, and pus, breaking through, is permitted to escape into the adjoining tissues along the vessels, nerves, tendons, and in the muscular interspaces or subcutaneous tissue. Finally, the cartilaginous surfaces become ulcerated, and the bone tissue is exposed to microbic infection. From this we understand that Willems' Method, to give satisfactory results, has to be started as early as possible, that, if a parasynovitis is present, the movements will be painful and difficult, and that, as soon as the suppurative process invades the tissues surrounding the joint, it will be absolutely too late and impossible, therefore, to utilize this method.

Willems' treatment in acute purulent arthritis is the treatment of choice for the typical abscess of the joint; in more advanced cases it always may be tried, but it will be more laborious. It will then sometimes work out successfully and sometimes fail to give the results that we generally expect, because, as a consequence of the inflammation, adhesions are likely to form, which will result in an incomplete recovery of the mobility of the joint. We have seen cases where forty-eight hours after the onset of the arthritis, the infection had already so extended that the treatment could no more be properly executed.

The principal aims of the method are to secure a good drainage of the abscess, and to restore to the joint its normal mobility. This will be obtained by arthrotomy and active mobilization of the joint. A double arthrotomy is performed, an incision being made in the case of the knee-joint on each side of the patella. Each incision should be from seven to ten centimeters in length. When the joint is opened an exploration of the subquadricipital bursa is advised. We know that this bursa is more frequently in communication with the joint than separated from it. But it is not uncommon to see that this bursa, while opening normally into the joint, as a result of the inflammation becomes secondarily walled off from the joint. If this condition exists, one of the lateral incisions should be prolonged in

*Presented before the Southern Minnesota Medical Association, Fairmont, Minn., June 28, 1920.

order to secure a good drainage of this pocket.

The bleeding vessels are then carefully tied off. No irrigation is required, and no draining material, such as rubber or gauze drains, is introduced. A sterile dressing is applied. The latter should be very loose; bandages are unnecessary; an ordinary sterile towel will suffice better than any other method of fixation. After the patient has been put to bed, and as soon thereafter as he is conscious, he will be urged to move his joint.

The second and most important point in Willem's Method is active mobilization. By active mobilization we mean active in its full significance. It means that no other person should give any assistance to the patient; neither does it mean that he should be permitted to assist himself with one of the other limbs. The patient shall alternately bend and extend his knee-joint by contracting all the muscles inserted around it. If this is properly done, good drainage will be secured and the treatment will be painless.

Active mobilization is effective because it requires a strong contraction of the muscles. This contraction produces a pressure on the joint, and any fluid present will be expelled.

Passive mobilization, on the contrary, has practically no effect, because, the muscles not being contracted, the capsula is allowed to distend, and the fluid is only displaced in the joint at every change of position.

Active mobilization is also painless, while passive movements are very painful. This will be easily understood. When a patient with an inflamed joint sees a doctor or a nurse ready to get hold of his leg, with the evident intention of forcing it to bend, he is frightened; he attempts to resist; and for that purpose, he immobilizes and stiffens the whole limb. If, notwithstanding this resistance, the doctor is able to produce even but a slight movement, the latter will be absolutely unphysiological, and an excruciating pain will result. On the other hand, after such manipulations, the patient will lose all faith in the method, and it will be further impossible to induce him to move his joint. When we assert that active mobilization is painless, one may be inclined to think that this is exaggerated. The condition of the joint when the treatment was first started, of course, is one thing to take into consideration; but, even in the most favorable condition, the first movements will be accompanied by a dull ache, rarely severe, which gradually disappears as the pathologic condition of the joint is improved. Once in a while a patient

will complain of an acute pain, but this appears due to an abnormal contraction or movement of the diseased limb, and, as he gets accustomed to the method, he will gradually move his leg more freely. That this statement is true is proven by the fact that in the course of the treatment, when, for some reason, pus is permitted to accumulate in the joint and provokes a real pain, the patient will be immediately relieved by mobilizing his joint. This has been observed frequently by those who are familiar with the method.

During the post-operative period it should always be borne in mind that good drainage is the most important factor in the successful egress of the treatment; therefore, retention of pus should always be looked for. This may, however, easily be prevented by frequent exercises, extensive movements, and free outlet of the fluid. Several times a day, and for a gradually increasing period of time, the patient will be urged to move his leg. The first trials will, of course, be the most difficult. Slowly the patient pulls up his leg, the heel dragging on the bed, and then, as he grows more confident, he will cautiously lift the limb until, finally, he moves it freely, as if it were perfectly healthy.

In the beginning the flexion will also be very limited, but as the pathological condition improves, the movements will gradually become more extended, until they are normal.

The earlier the patient arrives at full mobility the sooner he will be cured. A patient who, after a few days, comes to a practically complete flexion, will soon be well and able to get up on the tenth or twelfth day and walk about without any pain. His wounds will be healed within three to five weeks. On the other hand, we see patients who never are able to bend their diseased joints completely. In these cases the cure will take a much longer period of time, and the results will not be so satisfactory. This shows that no rules can be recommended in the general line of treating these cases; however, it may be prescribed that when the temperature is normal, and when pressure on the joint is no longer painful, the patient should be permitted to get up.

The post-operative care consists in changing the dressing once or twice a day, according to the discharge. The skin around the wounds should be kept thoroughly clean, and the incisions kept open by daily passing a swab or forceps gently between the edges. This will prevent the closure before the pathological condition in the joint is cured.

The evolution of these cases may be described as follows:

The high temperature comes down after the joint has been opened, and remains from two to three degrees above normal for a few days. It then gradually comes down, and is generally normal in the favorable cases after from eight to ten days. Locally the swelling disappears at the end of the first week. Pressure on the joint is then no longer painful. The discharge, composed in the first days of dense pus, becomes more fluid and clearer until purely serous fluid escapes from the joint, and, finally, but a few drops of serum are found on the dressing. Any pathological condition has now disappeared. The wounds are permitted to heal; the patient is cured.

One of the most striking features of this

method is the perfectly good general condition of these patients. At no period of the treatment does the patient give that pitiful picture that we used to see in patients affected with a septic arthritis. There is no toxemic aspect, no loss of appetite, and no physical or mental distress. When their wounds are healed, they are perfectly able to go to their work again, and their muscles are in an excellent, healthy functioning condition.

As to the results: Complete recoveries of the normal function of the joint are generally the rule. Sometimes, however, the mobility will be limited. As stated before, the final results depend upon the local condition when the mobilization was started, and on the way Willems' treatment was carried out.

GONORRHEAL INFECTION IN WOMEN*

By J. L. ROTHROCK, M. D.

ST. PAUL

Mr. President and Members of the Hennepin County Medical Society:

When I accepted the invitation to talk to you on the subject of gonorrheal infection in women, I realized that there was little that I could say to you that was new. The subject, however, is one of such prime importance that a brief review of our present knowledge of it will no doubt be of sufficient interest to occupy your attention for a short time.

The gonococcus, discovered by Neisser, in 1879, is familiar to you all; but it may not be superfluous at this time to review, briefly, a few of its peculiarities, which contrast markedly with those of other pathogenic bacteria.

The gonococcus is a diplococcus, which in recent infections is readily stained by the usual aniline dyes, and which is differentiated from similar cocci by being decolorized by Gram's stain. It is peculiar in its arrangement, tending to group formation, and in smears made from the secretions of infected mucous membranes, is found within the leucocytes. It is very sensitive to heat, being destroyed by a very brief exposure to the boiling temperature. It is also destroyed after twenty-four hours of drying, while, if kept moist, as on soiled linen, it may remain capable of growth for a long time. It is capable of resisting the action of antiseptic solutions of the usual

strength commonly employed in treatment, for from five to ten minutes. While it does not grow on the usual culture media, it grows luxuriantly and rapidly on human-blood serum peptone agar, in characteristic colonies which help to differentiate it from other organisms. Its pathogenicity is due to the elaboration of a bacterial protein or endotoxine, which in large doses in experimental animals may produce death. On the mucous membranes of human beings this endotoxine produces, first, a local irritation, hyperemia, and the outwandering of leucocytes, which are promptly destroyed by the endotoxine and which find their way into the secretion as pus cells. There is no general immunity against the gonococcus, and one attack does not prevent subsequent attacks.

The gonococcus is further characterized by certain biological peculiarities. It is termed by bacteriologists a facultative parasite, that is, it is capable of existing for a considerable time on mucous surfaces without producing any visible lesion, leading a purely parasitic existence, capable of becoming pathogenic under favorable conditions, and of producing characteristic lesions. In this latent form it may live for a considerable period, the host meanwhile being a carrier of infection.

Another peculiar characteristic of the gonococcus is, that it produces infections of varying intensity, which may be acute, sub-acute, or

*Author's abstract of a clinical lecture delivered before the weekly noonday session of the Hennepin County Medical Society, on March 17, 1920.

chronic, and the source of the infection, whether it be from an acute, sub-acute or chronic infection, will determine the course of the infection in the one exposed; that is, gonorrhea contracted from one suffering from a chronic infection will invariably run a mild or chronic course.

The pathological lesions produced by the gonococcus are confined to the mucous membranes, and its action is invariably superficial, it rarely penetrating beyond the sub-epithelial connective tissue. In this particular it contrasts strongly with other pathogenic bacteria, which have the power of penetrating deeply into the living tissues.

Its common mode of invasion is along the surface of the mucous membrane by direct extension; however, it may, under favorable conditions, gain access to the lymphatics, or even find its way into the blood-stream. Indisputable instances of such invasion and extension are on record, as, for example, gonorrheal arthritis, endocarditis, and the rarer gonorrheal septicemia, a few instances of which have been reported.

It may be said that no age is exempt. It invades the conjunctival sac of the new-born, and the genital organs of the infant and child, and the atrophic changes in the vagina of women beyond the menopause make them peculiarly susceptible to infection.

In women gonorrheal infection is essentially a disease of the genital organs, extragenital infections being comparatively rare. In the adult the infection is transmitted almost exclusively by sexual intercourse. The possibility of infection by external agencies, such as soiled linen or utensils, must be borne in mind, for in children this is, almost invariably, the mode of transmission.

The most common primary points of inoculation in women are the urethra and cervical canal. In acute gonorrhea, it may be said that the urethra is almost invariably infected at the beginning. The infection is by direct contact in the sexual act.

Gonorrheal infection may remain confined in the urethra and not invade the genital tract, especially if the subject is not exposed to further infection and receives prompt treatment. In most instances, however, simultaneously with the urethral infection the cervical canal is also inoculated, and from there the infection may ascend and invade the entire genital tract.

Gonorrheal infection of the vulva and vagina is rare in the adult, and is usually met with only in the two extremes of age, in young girls and in women beyond the menopause. The

explanation for this is, that the squamous epithelium is, because of its structure, more resistant to the action of the gonococcus than the type of epithelium which lines the rest of the genital tract.

Acute urethral gonorrhea begins to show symptoms in from one to three days after inoculation, characterized first by a little serous discharge accompanied by a smarting or burning sensation on urination. Within three or four days the disease is at its height, and there is usually a discharge of pus or blood, the meatus is swollen, urination is painful, and occasionally there is some swelling of the inguinal glands. Examination of the mucous membrane of the urethra shows it reddened, swollen, and edematous, often bleeding on the slightest touch. Smears made from the secretion show the gonococci in abundance in pure culture. After a few days the swelling subsides, and in many instances, whether treated or not, it tends to a spontaneous cure in three or four weeks. In a few instances, however, it becomes chronic, and the para-urethral glands become infected, a sequela which is difficult to cure and which may persist for weeks or months a source of contagion, without the patient being aware of its presence.

In the sub-acute and chronic types most of the symptoms enumerated may be absent, and evidence of the disease is only discovered by a careful examination. By introducing the finger into the vagina and making compression on the urethra a drop of pus may frequently be pressed from the meatus, or, if the para-urethral glands are involved, a drop of pus may be seen to exude from their mouths, located at the sides of the urethra. Smears from the secretion thus secured usually contain gonococci in abundance, and this establishes the diagnosis.

In urethral gonorrhea, sooner or later, the ducts of the vulvo-vaginal glands become infected. The orifices of these ducts are to be seen on inspection just outside the remains of the hymen, located about half an inch from the median line posteriorly. Pressure over the gland will cause a drop of pus to exude from the mouth of the duct, often mixed with mucus. Smears made from the secretion will demonstrate the presence of gonococci in case of infection. Infection of these ducts may be unilateral or bilateral, and invariably remains confined to the duct, the gland itself rarely or never becoming directly involved by the gonorrheal process. Secondary infection of the gland by other bacteria is ex-

tremely common, and is in fact almost the rule at some time during duct-infection. This manifests itself by rapidly developing acute abscesses of the glands with swelling of the labia, often reaching the size of a hen's egg. These abscesses tend to point quickly and to rupture spontaneously and evacuate themselves. Generally speaking, infection of the ducts of the vulvovaginal glands is rarely primary, and develops only after infection of the urethra or cervix has existed for some time. In fact, it sometimes happens that the first intimation of duct-infection is the development of an acute abscess of the gland. Infection of these ducts may exist unsuspected for a long time, and constitutes a source of infection that should be carefully looked for. These ducts sometimes become occluded, giving rise to fusiform swellings, which may simulate abscess of the glands. They are usually smaller and run a much less acute course than abscesses. They contain pus in which may be demonstrated the gonococcus. These swellings are termed pseudo-abscesses.

Gonorrheal infection of these ducts often terminates in cysts of the vulvovaginal glands. They are simply retention cysts, the lumen of the duct having become occluded. They are almost invariably an indication of previous gonorrheal infection.

The cervical canal is, next to the urethra, the most common point of primary inoculation. Congenital erosions of the cervix greatly predispose to infection, since the gonococcus finds a favorable soil on the transitional epithelium which covers the erosion, it being similar to that lining the cervical canal. Here the symptoms do not begin to appear for six or eight days after infection. The discharge is at first serous, but soon becomes purulent; the cervical lining is reddened and bleeds easily. Aside from this, there may be few or no symptoms. Should menstruation occur now, it is apt to be slightly prolonged and rather more profuse, but until the infection ascends and invades the Fallopian tubes there is little or no pain. The infection may remain localized in the cervical canal for a considerable period, and in fact in a few instances does not appear to extend further.

Sooner or later, however, if untreated, it will under favorable conditions extend up over the endometrium and eventually invade the Fallopian tubes. This is especially likely to take place at the menstrual period, at which time the endometrium is covered with blood, which forms a favorable culture medium for the rapid growth

and extension of the bacteria over the surface of the endometrium.

Very frequently the first manifestations of salpingitis occur during or just after the menstrual period. In some instances the tubal involvement is so slight as to be almost lacking in symptoms.

Cervical infection, if promptly and intelligently treated, runs a comparatively short course. In a considerable percentage of cases that receive no treatment, and especially in those in which there was a pre-existing erosion of the cervix, the infection gains access to the mucus secreting glands of the cervix, where it may persist for a long time, giving rise to a profuse mucopurulent discharge, which is highly diagnostic. The cervix is slightly swollen, soft, and hyperemic. Smears made of the secretion will usually fail to demonstrate the presence of gonococci, yet this is not proof that they are not present, as in infections of long standing the gonococcus in its growth undergoes involution forms, and in this stage of development resists the usual stains. Such deep-seated infections may remain for months or even years a source of contagion, and at the same time resist most efforts at treatment, because the infection is in the glandular structures in the depths of the cervical tissue, where it is impossible to reach it by medication.

In the Fallopian tubes the gonococcus finds a most favorable soil, owing to the great expanse of mucous surface in proportion to the size of the tube. The infection quickly extends along the tube until it reaches the fimbriated end. Gonorrheal salpingitis is almost invariably bilateral, but one side is usually in a more advanced stage than the other. The pathological changes which take place in the tubes are most varied. In the mild type of case the mucous membrane of the tube becomes somewhat thickened, due to infiltration of the subepithelial connective tissue by leucocytes, but here, as elsewhere, the distinguishing feature of gonorrheal infection is, that it remains superficial. Occasionally there are fusiform swellings of the tube near to the uterus, and these were thought pathognomonic and diagnostic for gonorrhea, but I have seen similar swellings in tuberculosis of the tubes, and even in acute infection by other pyogenic bacteria. Soon the lumen of the tube becomes filled with pus, and a few drops find their way out of the fimbriated end, and we now have an extension to the peritoneum.

The peritoneum, unlike the mucous membrane of the genital tract, is not a favorable soil for

the growth of the gonococcus, but it is here capable of exciting an adhesive inflammation, and this is brought about by the outpouring of an exudate of lymph, which rapidly organizes and glues the serous surfaces together.

In all inflammation involving the tubes the fimbriated extremity quickly becomes sealed, and the fate of the tube will now depend upon the severity of the infection. In subacute or chronic infections the process may subside and recovery speedily take place, leaving only a slightly thickened and adherent tube. If the infection is more acute and an accumulation of pus fills the tube, the tubes may be enlarged to the size of a finger, and may hang rather loosely suspended in the pelvis at the sides of the uterus, often presenting constrictions and tortuosities, but remaining comparatively free from adhesions.

In other cases where the infection has been more intense, the tubes are converted into pus sacs of considerable size, often densely adherent to the surrounding structures. These are found chiefly in those cases that have suffered from repeated attacks of inflammation. In these cases there are often extensive intestinal adhesions, and frequently these pus sacs become secondarily infected from the intestinal tract by other pyogenic bacteria. The peritoneal process in adults is invariably localized in the pelvis, and the occurrence of general peritonitis from gonorrheal infection is exceedingly rare. In the localized process there may follow as sequelæ rather extensive intestinal adhesions, but these are usually confined to the lower part of the abdomen.

The clinical course of gonorrheal salpingitis varies quite as much as the pathological process. In the beginning, just as in the uterus, there are few or no symptoms; perhaps a sense of weight or heaviness in the pelvis, and menstruation is apt to be prolonged and the flow profuse. Not until the peritoneum becomes invaded is there much pain, and this, in mild cases, may be so slight as not seriously to incapacitate the patient.

Many women with subacute or chronic gonorrheal infection pass through the entire course without ever having been obliged to go to bed, or, if so, never for more than a day or two at a time during the menstrual period.

There is usually a slight rise of temperature even in the mildest cases. On the other hand, in very acute infections, as, for example, those that develop during the puerperium, the clinical course may extend over a period of from two to four weeks or more, with the usual manifestations of

a localized peritonitis and with a temperature often reaching 103° or more. Even in these acute cases spontaneous recovery is still possible, but in most instances there is left behind so much disorganization of the tubes that their removal becomes imperative.

The ovaries, owing to their close relation to the tubes, also suffer in gonorrheal infection. The inflammatory process extends over its surface, with resulting infiltration of the tunica albuginea, producing adhesions and later seriously interfering with ovulation, and, inasmuch as the follicles do not rupture, they predispose to cyst-formation. Occasionally a corpus luteum becomes infected, with a resulting abscess or, through an adhesion of a pus tube to an ovary, a follicle becomes infected, resulting in a tubo-ovarian abscess.

The treatment of gonorrheal urethritis should begin at once, or in very acute cases as soon as the swelling has disappeared. This may be done, as in the male sex, by urethral irrigations, or, as I have found equally effective, by injections. One thing to be remembered is, that the infection is superficial, especially at first, and that all that is necessary is to distend the urethra with the solution so that it may come in contact with every portion of its wall. In the acute stage, mild and unirritating solutions should be used, preferably argyrol in 10 to 20 per cent solution, or protargol in 6 per cent solution. Later, when the acute stage is passed and the membrane is still swollen and relaxed, nitrate of silver in 1 or 2 per cent solution injected with an instillation syringe will complete the cure in a short time. The infection shows little tendency to invade the bladder, although cases have been reported. Treatment must be continued until smears made from the secretion are negative after an interval of several days without treatment.

In case the para-urethral glands become infected, nothing short of destruction of these glands by the galvanic needle, or laying them open by incising them, is effectual, for the reason that it is difficult to reach the depth of these glands by medication.

Treatment of vulvovaginal-gland infection also presents difficulties, and it is often necessary to open the ducts; this may be done under local anesthesia with a canaliculus knife. The acute abscesses of the vulvovaginal glands should be promptly and widely laid open, being careful to open widely the capsule of the gland. It is highly important to pack the opening with a small strip

of gauze; otherwise it will close too soon, and a residual abscess will result.

Vulvitis and vaginitis of gonorrheal origin, while seldom met with in adults, frequently call for treatment in children. Vulvitis usually yields speedily to cleanliness and the use of mild antiseptic solutions. Vaginitis may be treated similarly. I have found it of advantage, in small children, to introduce into the vagina a thin strip of gauze or tape medicated with iodoform or ichthyol. This distends the vagina and keeps its walls apart, and thus prevents maceration of the epithelium.

In children the urethra is almost invariably infected and must receive attention, otherwise it will persist and be a source of reinfection for the vulva and vagina. This is, I believe, the cause of relapses, which are so frequent in children.

In the treatment of uterine infection two views are held. One is the expectant treatment with rest in bed and the avoidance of any attempt at local treatment except, perhaps, vaginal douches. The other and, to my mind, the more rational, is the prompt institution of local therapy to the uterine cavity, beginning with mild gonococci-cides and following it up with more penetrating solutions and astringents. At first the applications are confined to the cervical canal, and later when there is an indication of extension to the tubes the application is made to the entire uterine cavity. This is readily done with an applicator wound with cotton, and under strict aseptic precautions I have yet to see, after a considerable experience, any untoward results. These treatments should be combined with hot antiseptic douches.

There is one point in the treatment of gonorrheal infection which must be insisted upon, and that is the absolute interdiction of sexual intercourse during the course of treatment. I am thoroughly convinced that many cases that run an obstinate and persistent course are being constantly re-infected, and where this is the case treatment is obviously a hopeless task.

Chronic infection of the cervix presents quite a different problem. The usual local treatment is of little avail, because our medication does not reach the seat of infection. There is usually in these cases a chronic salpingitis, which keeps up a constant state of passive hyperemia of all the pelvic organs. This produces a hyperactivity of the secreting glands of the cervix. In such cases the removal of the tubes often has a favorable

effect on the cervical secretion. At times there is no relief until one excises the diseased cervical mucosa, amputates the cervix, or does a total hysterectomy. These radical measures should be postponed as long as possible, for the tendency of the infection is to die out after a long time.

In many instances infection of the tubes heals spontaneously, leaving the tubes obliterated and adherent. When the tubes become disorganized and contain accumulations of pus the symptoms are usually so urgent as to call for their removal. Opinions differ as to when this should be done. If done early after the acute stage has passed and before secondary infection has taken place, the operation is easier and is attended with less risk. Neglected cases which have suffered from repeated attacks of inflammation are often secondarily infected from the intestinal tract, and call for some of the most difficult, as well as the most dangerous, operations in abdominal surgery. The gonococcus in an enclosed pus sac tends to die out speedily, hence the pus in many of these old tubes is sterile, and the risk of the operation is slight, even though the peritoneum is accidentally soiled.

Certain sequelæ follow gonorrheal infection of the tubes and ovaries, which call for treatment, most important of which is cystic degeneration of the ovaries. This furnishes a strong argument in favor of early removal of the infected tubes, before repeated attacks of inflammation destroy the ovaries. At this state the ovary is usually only slightly, if at all, involved. The woman is already sterile, and the tubes are therefore useless. In view of the influence of the internal secretion of the ovary upon the human organism, it is very desirable to preserve them. With this in mind, conservatism would seem to lie in the direction of early removal of the tubes.

Ovaries that have been involved in previous inflammation and have become cystic usually produce symptoms which call for their removal.

What now is the prognosis of gonorrheal infection in women? I am not one of those who take the pessimistic view that gonorrhea is an incurable disease. On the contrary, in my experience I have found it most amenable to intelligent treatment, based on a knowledge of the peculiarities of the causative agent and the pathologic lesions which it occasions. Bearing these thoughts in mind, a cure may be confidently expected within a reasonable time in the majority of cases.

AFTER THE WAR, WHAT?

BY H. M. BRACKEN, M. D.
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The Bureau of War Risk Insurance was originally created to provide insurance for the soldiers. Later, a bill was passed authorizing the Secretary of Treasury "to provide medical, surgical and hospital services and supplies for discharged soldiers, sailors, marines, army and navy nurses (male and female), and for other purposes." This work was first carried out from Washington.

The following activities are interested in what is known as "War Risk" cases:

1. Bureau of War Risk Insurance.
2. Federal Board for Vocational Education.
3. U. S. Public Health Service.
4. American Red Cross.
5. American Legion.

The U. S. Public Health Service, through its Hospital Division, is authorized to assist in carrying out the bill above referred to "in the same way as now provided for other beneficiaries of the Public Health Service." This brings the Bureau of War Risk Insurance and the U. S. Public Health Service very closely together in this work.

Prior to August, 1919, examinations for compensation were directed from Washington, either through examiners appointed in various parts of the country or by direct letter to the applicant instructing him to apply to one of a group of physicians in his own or neighboring town. With the bringing of the U. S. Public Health Service into this work authority was given for the appointment of local examiners throughout each district under the Bureau of War Risk Insurance, these examiners to be paid for services rendered on a fee basis by said Bureau. These examiners make their reports to the Supervisor of the district in which they belong. In the office of the Supervisor these reports are copied and distributed to the various groups entitled to same, the original being sent to the Bureau of War Risk Insurance at Washington.

For convenience the United States has been divided into fourteen districts. The Tenth District comprises Minnesota, North Dakota, South Dakota, and Montana, with headquarters at present in St. Paul (now, Sept. 1, in Minneapolis).

In addition to the Bureau of War Risk exami-

ners nominated through the office of the Supervisor representing the U. S. Public Health Service in the district, but appointed by the Bureau of War Risk Insurance, are a group of officers in the employ of the U. S. Public Health Service. First in this group are men known as Acting Assistant Surgeons, who have certain functions assigned them. They are on the pay-roll of the U. S. Public Health Service. Wherever an Acting Assistant Surgeon is located it is not permissible to have an examiner for the Bureau of War Risk Insurance.

At certain points hospital units have been established, and at these points a group of men known as Attending Specialists have been appointed and have cases referred to them for observation or treatment under the U. S. Public Health Service. These units are under the charge of the local Acting Assistant Surgeon.

The Federal Board for Vocational Education was created with the idea of giving special training to discharged disabled soldiers, sailors, marines, etc. This Board, and also the Bureau of War Risk Insurance, are entirely independent, under legislative act, of the U. S. Public Health Service, but the general purpose has been to co-ordinate the work of these two agencies and the U. S. Public Health Service. As a result the Chief Medical Officer under the Federal Board for Vocational Education and the Chief Medical Advisor under the Bureau of War Risk Insurance are both men connected with the U. S. Public Health Service, both bearing the rank of Assistant Surgeon General, U. S. Public Health Service.

The local examiners of the Bureau of War Risk Insurance serve also the U. S. Public Health Service and the Federal Board for Vocational Education.

The Federal Board for Vocational Education has a group of District Medical Officers of its own whose purpose is to pass upon the fitness of an applicant for training, not to treat disease.

Those coming under the group of disabled as a result of the recent war are entitled to either vocational training or compensation. If able to take vocational training they receive financial aid during this period, but do not receive compensation. If on the other hand they are in need of medical care they receive such and also compen-

*Presented at the annual meeting of the South Dakota State Medical Association, May 19 and 20, 1920.

sation. In other words, one suffering from a disability cannot draw funds from both the Federal Board and the Bureau of War Risk Insurance.

Examiners reporting a disability do not determine the percentage of disability. It is for them to report the facts, giving details fully and noting a disability of above or below 10 per cent. These reports go to experts in the office of the Bureau of War Risk Insurance, who determine the amount of disability.

If an individual needs medical treatment, he is referred either to clinics where he can be cared for as an out-patient or placed in a civil or U. S. Public Health Service hospital. The civil hospitals used in this way are only those with which a contract has been made in each district through the Supervisor of the district, such contract, however, being referred to Washington for approval. A hospital cannot be used until approved by the proper authorities in Washington. Patients are not referred even to these hospitals with contracts unless authorized by the Supervisor of the district in which they are located.

under the Bureau of War Risk Insurance, should not be confused. This organization of the U. S. Public Health Service which has charge of these disabled individuals has nothing whatever to do with the insurance question.

You all know of the excellent work that has been done by the American Red Cross even prior to our entrance into the war. Since the close of the war, a considerable amount of this work has been taken over by the Bureau of War Risk Insurance.

It is not for me to dwell upon the work of the American Legion at this point. You are all familiar with its local activities. So far as the U. S. Public Health Service and the Bureau of War Risk Insurance are concerned in the matter of compensation, the American Legion is helpful in that it refers cases which are entitled to compensation to the proper authorities and to a considerable extent follows them up to see that they are receiving that to which they are entitled.

In order to make the relationship of these various organizations clear, your attention is requested to the following table:

ACTIVITIES INTERESTED IN WAR RISK CASES

	<i>Medical Head</i>	<i>District Organization</i>	<i>County Organization</i>	<i>Local Staff</i>	<i>Care</i>
Fed. Board of Vocational Education	Chief Medical Officer Asst. Surg. Gen.	Yes	Yes	No Med. Staff	
U. S. P. H. Service	Hospital Division Asst. Surg. Gen.	Yes	Yes	A. A. Surg. Specialists	Home Hospital Sanatorium
Bureau of War Risk Insurance	Chief Med. Advisor Asst. Surg. Gen.	No Med. Org.	No	Examiners	Insurance & Compensation
American Red Cross		Yes	Yes		
American Legion		Yes	Yes		

The care of patients in hospitals is also authorized by the Supervisor of the district.

Those having disabilities are not compelled to use these civil contract or U. S. Public Health Service hospitals, nor are they compelled to accept the services of representative medical men of said U. S. Public Health Service, but they can have both hospital care and the services of these medical men at the expense of the Federal Government if they wish. If they do not so wish, they can select their own physician, but under these circumstances they must pay their own medical and hospital bills.

Compensation and insurance, although both

The Tenth District comprises 252 counties. There are examiners in 200 of these counties. Counties not represented by examiners are either those thinly settled with no resident physician or those so near to a hospital unit that applicants can be referred to said unit for examination. In making appointments in these various counties, the Bureau of War Risk Insurance insists that ex-service men shall be nominated so far as possible.

This district is dependent entirely upon contract beds in civil hospitals. At present there is an average of about 800 patients in hospitals constantly.

The military population of the United States was 4,761,480; of the Tenth District (this district) about 245,000. The known disabled demobilized in the United States is about 425,000; the actual disabled demobilized probably about 800,000; the disabled in this district based on the percentage of troops should be about 40,000.

A very complete report of the need of the country in caring for these disabled individuals is given as Document No. 481, House of Representatives, this being a letter from the Secretary of the Treasury, the Honorable Carter Glass, dated December 5, 1919. In this letter is an estimate as to the number of beds required:

- (a) For the entire country.
- (b) By districts.

It is estimated that for this district hospital beds will be required during the next two years as follows:

General	400
Tuberculosis	600
Neuropsychiatric	500
<hr/>	
Total	1,500

The routine of this work may be outlined as follows:

1. Examiners under the Bureau of War Risk Insurance.
2. Examiners' reports to Supervisor of the District.
3. Examiners' reports sent through Supervisor to the Bureau of War Risk Insurance and to the Federal Board for Vocational Education.
4. Clinics with which are connected Acting Assistant Surgeons where examinations are conducted similar to those in the field by local examiners and through whom patients are referred to Attending Specialists.
5. Attending Specialists covering a group including internists, surgeons, neuropsychiatrists, tuberculousis (special), röntgenologists, orthopedists, eye, ear, nose and throat. These Attending Specialists not only conduct special examinations on cases referred to them, but also have charge of patients in hospitals, either directly or through assistants.

Some idea can be secured of the amount of work to be done by noting the following list of the number of reports forwarded to the Bureau of War Risk Insurance since about the middle of October, 1919, at which time the record was started:

	Cases	
1919—October (1 wk.)	1,238	
November	604	
December	1,640	3,482
1920—January	1,135	
February	971	
March	1,795	
April	2,285	
May (1 to 10).....	661	6,847
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Total	10,329	

In this list there may be a few duplications as a result of re-examinations.

To date, approximately 2,200 patients have been hospitalized in this district.

Weekly reports are made to the Surgeon-General, U. S. Public Health Service by the Supervisor of the district. The activities of a week are shown by the following report:

Number of requests for physical examinations received from the Chief Medical Advisor, Bureau of War Risk Insurance, during week.....	478
(b) For immediate action	201
(c) For future action	277
(d) Number of requests acted upon during week	1,301
(e) Number of requests for immediate action remaining unacted upon.....	0
Number of requests for physical examinations received from the Federal Board for Vocational Training during week...	165
Number of such requests acted upon during week	942
Number of pieces of incoming correspondence received during week.....	2,066
Number of pieces of outgoing correspondence during week	5,409
Number of cards sent to Bureau, in addition to above.....	1,200
Total number new patients examined during week:	
Headquarters	88
Re-examinations	73
Field	344
Total	505
Total number patients in contract hospitals at beginning of week.....	767
Total number patients admitted to contract hospitals during week	74
Total	841
Total number patients discharged from contract hospitals during week.....	60
Total number patients remaining in contract hospitals at end of week.....	781

RESEARCHES IN ANATOMY: A REVIEW

BY RICHARD OLDING BEARD, M. D.
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It is significant of the new light that has broken upon medical science in the past quarter of a century, that it is the living, rather than the dead body upon which, in major degree, study is bestowed.

Anatomy, once solely the science of form, of parts, of relation and of structure is taught to-day from the viewpoint of function. Between it and physiology, the science of the behavior of the animal organism, there is no longer a dividing line. The researches pursued in the Department of Anatomy of the University of Minnesota are concerned with problems of the living thing; and they have a very definite bearing upon the human living thing.

With a recognition of the social and economic values upon which emphasis today is put they relate to the chief social asset,—the child. While the pediatricists are urging the breast-feeding of the infant, the anatomists are coincidentally studying the development of the mammary gland and the capacity of the infant stomach. While physicians and social service nurses are giving prenatal instruction to expectant mothers, the anatomists are specializing in the study of fetal anatomy and growth. While the medical hygienist deals with the great issue of underfed and malnourished children in our public schools, and finds the effects of underfeeding and bad feeding in mentally retarded pupils, the researchers in anatomy are conducting experiments in the results of semi-starvation and refeeding upon the albino rat. And some of our medical educators actually lack the vision to see that a direct road leads from the experimental laboratory to the school-room.

In the lower animal the results of this research show, as experience has shown in the child, that, while undernourishment leads to skeletal overgrowth, the tissues, in general, qualitatively suffer; that length or height increases and that weight or girth diminishes; that in the underfed the brain and spinal cord are almost constantly subnormal; that the reproductive system is damaged, especially in the female; that the muscle tissue maintains itself during deficient feeding for a time, but that its ultimate development is impaired; that refeeding, or improved feeding, induces rapid gains; that their rapidity is proportioned to the length of the practice of underfeeding; that the underfed, in direct ratio to the period of partial starvation, achieve only

subnormal adult size. The analogies with the human are inescapable. The systematic character and breadth of these researches is assurance of their permanent value.

The following monographs published by the Department of Anatomy during the past five years furnish the text of this review:

1. Effects of acute and chronic inanition upon the relative weight of the various organs and systems of adult albino rats.—C. M. Jackson, M. S., M. D., *American Journal of Anatomy*, 1915, vol. 18, pp. 25-116.

2. Changes in the relative weights of the various parts, systems and organs of young albino rats held at constant body-weight by underfeeding for various periods.—C. M. Jackson, M. S., M. D., *Journal of Experimental Zoology*, 1915, vol. 19, pp. 99-156.

3. Effects of inanition upon the structure of the thyroid and parathyroid glands of the albino rat.—C. M. Jackson, M. S., M. D., *Journal of Anatomy*, 1916, vol. 19, pp. 305-352.

4. Effects of inanition and refeeding upon the hypophysis in the albino rat.—C. M. Jackson, M. S., M. D., *American Journal of Anatomy*, 1917, vol. 21, pp. 321-358.

5. The postnatal development of the suprarenal gland, and the effects of inanition upon its growth and structure in the albino rat.—C. M. Jackson, M. S., M. D., *American Journal of Anatomy*, 1918, vol. 25, pp. 221-289.

6. The effects of underfeeding and refeeding upon the growth of the various systems of the body.—C. M. Jackson, M. S., M. D., and Chester A. Stewart, Ph.D., M. D., *Minnesota Medicine*, 1918, vol. 1, pp. 403-414.

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A LOST SURGICAL NEEDLE AS A FOREIGN BODY

BY G. FRANK LYDSTON, M.D.

Formerly Professor of Genito-Urinary Surgery and Syphilology, Medical Department, State University of Illinois
CHICAGO

The cut shows a part of the femur containing the needle.

A lad of 16 was referred to me by Dr. B. S. Rogers, with the following history: About three years before he had been operated on by a well-known surgeon for some condition—probably tuberculosis—of the outer aspect of the right thigh, and just above the knee-joint. The operation wound healed perfectly, leaving a somewhat raised and irregular scar. Ever since the operation the patient had complained of pain and soreness in the vicinity of the wound, with occasional moderate disability of the knee-joint. Examination showed nothing until the x-ray was used, when a good-sized Hagedorn needle was plainly revealed, with the point apparently embedded in

the periosteum, about three and one-half inches above the articular extremity of the femur. The needle, which was in very good condition, was removed by free incision. The wound healed promptly, and the symptoms entirely disappeared.

It is hardly probable that the symptoms were due to the needle. It is more likely that the pressure of scar tissue upon nerve filaments was the cause of the irritation. Why the surgeon was using so large a needle of the Hagedorn type, and how he lost it in the wound, must remain a matter of speculation. Needless to say, the patient was not informed of my findings.

25 East Washington St.

THE JOURNAL-LANCET

Represents the Medical Profession of

Minnesota, North Dakota, South Dakota and Montana

The Official Journal of the

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SEPTEMBER 1, 1920

THE FINANCIAL STATUS OF THE DOCTOR

Someone must have been messing things up considerably when the *Literary Digest* comes out with its objection to the Government enterprises in which the medical profession is involved; and it certainly irritates Dr. George H. Tichenor, of New Orleans, for he replies in the *Western Medical Times* of January.

To the first comment of the *Literary Digest*, which says of the doctor: "Unless he is in public service, or in the employ of some industry, or holds a hospital-staff position, or is a specialist with established associations, he is having hard sledding to make a living," Dr. Tichenor replies as follows: "The first assertion is absolutely true, as the whole profession is compelled to compete with government-paid employees in health, narcotic officers, and, lately, venereal-disease officers, who have the advantage of the law in enforcing regulations, free drugs as an inducement to draw patients, and lengthy reports for the private physician to fill out, which, in the end, discourage him to handle such cases. What is true in regard to venereal diseases, is more especially true in regard to handling addicts of narcotics, with the added pressure, perhaps, of a misunderstanding which will damage the professional character of the private physician. In both instances the Government has the addresses of the doctor's private patients, a condition which is not allowed for one moment in business; inter-

locking directorates, etc., or the list of customers of one firm to be given another." This reply shows what change may take place in the course of a few months; and if the reply were made today it would be rather unfortunate, for the reason that the number of medical men who are engaged in health offices, including venereal disease, and the men who have charge of the prosecution of the illegal sale of narcotic drugs, as well as many other professional men who were formerly employed by the Government, has been measurably reduced. Consequently, these men are again striving to earn a livelihood, and the majority of them have been successful. A small minority have been unsuccessful because they have temporarily lost their grip on their former patients, and a few have been induced to go into other lines of work.

It is quite true that the Government and the State issue bulletins which tend to inform people on public health topics, but, as a matter of fact, these bulletins make very little inroad upon the physician's income. The last four or five years, which include the period of the war and influenza, have left comparatively few physicians unemployed or without adequate incomes. It is quite true that many laboratory men, social workers, and men who are employed as medical aids do not earn as much money as do expert stenographers, first-class cooks, or brick-layers.

The second comment made by the *Literary Digest*, "Good authorities assert that the average income of doctors, little and big, is about \$750 a year. I have no way of proving the figure to be correct or incorrect . . ." is somewhat misleading unless all the physicians are included in this average income of \$750 a year. This, of course, is much less than the average income of school teachers, and even they are found to receive less than is their due and it costs them more to live than their salaries. It is quite true, too, that the average physician does an enormous amount of charity work, and this average includes not only the big men but the little men, that is, the men of small incomes. However, if you talk with these men you will find that they are perfectly willing to do this—not for gain, but because they have a professional pride in helping those who need medical attention. And there are thousands of doctors who are perfectly willing to work on small salaries in order that they may fit themselves for work in the years that are to come. Broadly speaking, the medical student who graduates from a well-organized and well-

conducted medical school is quite able to go out and practice medicine and to compete with his fellow-practitioner who has been out for several years. But, does he really know how to practice medicine, and can he do it with the same comfort and the same skill that the experienced man can bring to bear? In some cases, yes. In the majority of cases, no. His laboratory training and his hospital training all count for a great deal, but when we come down to the final analysis it is the man who has been through years of experience and who has been tried and not found wanting who is the better equipped to deal with the various problems that come up. This includes the man who keeps up with the medical literature of the day and who associates himself with younger men who have ideas which may be more or less valuable. At least, they are suggestive, and the man of experience ever grasps at the smallest detail that may help him in his emergency work.

The pleasant fact remains, however, that the average doctor is earning more than \$750 a year, and it would be surprising if the public knew that many medical men who appear to be in moderate circumstances are earning very comfortable incomes. Of course, a lot of them buy oil stocks, and others are induced to part with their money by the clever promoter or schemer, but even that time is passing. The medical man is becoming more of a business man. He looks after his own interests. He consults with his banker or his lawyer before investing, and attends more closely to his office organization and the collection of his accounts. This is something which is not necessarily gained by long years of experience. It is a faculty in the mind of the medical man, be he a recent graduate or an older one. The average doctor is a little shy about money matters. He does not like to tell how much money he makes. It is the common doctor who loves to prate of his practice and boast of his income and his expenditures; and, incidentally, he gives himself a little boost on the side, all of which goes down the neck of the credulous, but stops at the teeth of the man who knows.

THE ADVANCE IN HOSPITAL RATES

One of the Minneapolis newspapers came out some time ago with the warning, in big headlines, "If You Are Planning to Go to a Hospital, Do It Now. Being Sick Will Cost More Next Month." This suggestion, of course, refers to the advance in rates in all hospitals on account of the increase in the cost of help, general sup-

plies, food, and everything needed in a hospital. It costs much more to employ a superintendent and still more to employ nurses, even if they do not stay with you more than one or two weeks. The food is much higher, and other necessities are sometimes difficult to secure. Then, too, the druggist has increased his prices on account of the revaluation of medical preparations. Most of the drugs have been advanced in price to an astounding degree, and even then are difficult to obtain, partly on account of the source of supplies and partly because the employees in these, as in other, industries are more difficult to secure and must receive more pay. All cotton goods and linen—gauze, pillow-slips, sheets, towels, and wash-cloths—have increased 50 per cent over their cost this time last year. This is a considerable item; and when you consider that, not infrequently, patients use ten or eleven sheets a day and a number of night-clothes, the laundry expense can very readily be estimated as a large overhead expense.

The employment of outside help, particularly cooks and maids, is a very serious problem, and some of their demands are almost insurmountable. This means more work for the nurses in the hospital, and for the superintendents. To make ends meet and to care for the patients as they should be cared for is not an easy matter. Then, too, the private-nurse situation calls for expenses that have materially increased. The nurses now get thirty-five to forty dollars a week, and this, they think, is necessary on account of the increased cost of laundry, to say nothing of the increased cost of room and living. Some patients who are very sick require two nurses, and the amount of expense at the end of the week is appalling to many of the relatives or friends who pay the bills.

The only thing that has not increased very much is the doctor's fee. He still manages to get along with about the same fee as he charged years ago, and yet this is not very much appreciated by the average run of patients.

Right in line with the increased expense account of the individual in general we occasionally find the same reckless expenditure on the part of patients. They seem to have money, at least some of them claim they have, and they not infrequently cheerfully bear the burden of expense; and, again, they not infrequently evade expense by not paying their bills, and this is another liability of the hospital. As a matter of fact, the increase in the hospital rate is not the

important problem. It simply means that for the time being it has been necessary from various points of view to get enough to maintain the hospital.

In spite of all this difficulty, however, there is an urgent demand for a number of hospital beds. St. Paul is about 1,700 behind its demands, and Minneapolis averages about 3,000 beds short. Consequently, it is not surprising that we hear of new hospital projects; and in the face of the enormous increase in cost, this matter has been under consideration not only by hospitals but by new ventures in hospital construction. We all remember when hospitals were based on a cost of about \$1,000 a bed, and we remember, too, the increase in cost which necessitated an estimate of \$2,000 a bed. At the present time it costs about \$4,000 a bed to construct a hospital. Consequently, if you are planning to be sick, or if the doctors are planning to take care of an increased number of sick people, they are advised to suggest a mild disorder. Unfortunately, the illnesses with which we have had to deal during the last two years have been of grave or serious nature, or very much prolonged, consequently no one is to blame for this increased cost of care in the hospital, as well as in the home where nurses and doctors are employed.

CORRESPONDENCE

VORONOFF—"A NEW DISCOVERER" OR ANOTHER FAKIR?

TO THE EDITOR:

I notice that the eminent "discoverer," Voronoff, has landed in New York. He, according to the *New York Tribune* for Monday, July 19, 1920, announces "that his purpose in visiting America is to carry the operation a step farther by using the human glands instead of those of apes or other animals." He said, "that he was confident that he could graft the interstitial glands of a man to whom death had come while he was in perfect health, to the body of a living man with most beneficial results. The victim of accident or of the electric chair at Sing Sing would yield a suitable gland." He states, "that he hopes to demonstrate this wonderful new operation before representatives of the Academy of Medicine."

This fellow apparently proposes to demonstrate as a new proceeding the work that I have been doing for the last six years, of which I have

operated a large number of cases. Reports of my work first appeared in the Bulletin of the Chicago Medical Society, March 7, 1914. The first operation was done by myself upon myself, January 16, 1914. In the *New York Medical Journal* for March 21, April 4, July 11, October 17, 24 and 31, and November 7, 1914, and March 27 and April 3, 1915, I reported a large series of cases with microscopic studies and studies of the effect of the sex hormone. Also in 1917 my book appeared in which I reviewed all my work and added a number of new cases, including also some experiments upon lower animals.

Can you not aid me in "spiking the invader's guns" through the editorial columns of your journal and through the public press? I have sent to Voronoff, care of the *New York Tribune*, the evidence that he is six years too late. It is hardly possible that he did not already know of my work.

In addition to the foregoing reports, several reports have been made in the *Journal of the American Medical Association* during the past three years. The Paris press also commented extensively upon my work in May, 1914, notably *Le Gaulois* and *Le Matin*. It also appeared in the *Courier de Lyon* about the same time. Then, too, in 1917, a complete article in French, written by one of our Chicago physicians, was sent to *Paris Medical* and accepted by that journal. This, however, never was published so far as I know. The letter of acceptance is available. I understand that Voronoff is on the staff of *Paris Medical*, although I have no authentic information upon that point.

Very fraternally,

G. FRANK LYDSTON, M. D.

Chicago, Ill., July 31, 1920.

BOOK NOTICES

A TEXT-BOOK UPON THE PATHOGENIC AND PROTOZOA, FOR STUDENTS OF MEDICINE AND PHYSICIANS. By Joseph McFarland, M. D., Professor of Pathology and Bacteriology in the University of Pennsylvania. Ninth edition, thoroughly revised. Octavo of 858 pages with 330 illustrations, a number of them in colors. Philadelphia and London: W. B. Saunders Company, 1919. Cloth, \$4.75 net.

This volume differs from most text-books on bacteriology, both in the variety of subjects treated and in the arrangement of the subject matter. Nearly all of the discussions of the various bacteria and protozoa are adequate, and many of them are excellent.

The chapters on rabies and poliomyelitis give good short discussions of the pathology, as well as the etiolo-

ogy. Concise statements of the principal pathological lesions involved are very acceptable bits of information, and ought to be included in every text-book on pathogenic bacteria and protozoa, but are not. Such information helps to correlate in the mind of the reader the effect with the cause. It aids in properly bringing together the two branches of science,—bacteriology and pathology. The book would be even more valuable and interesting if such brief statements of lesions had been made for all of the micro-organisms treated.

The chapters on the biology of bacteria, infection and immunity, and the Wassermann test are well written. In the chapter on the pneumococcus there is an excellent discussion of the different methods of typing the organism. The inclusion of subjects like relapsing fever, infective jaundice (spirochaetosis ictero-hemorrhagica), favus, thrush, ringworm, sporotrichosis, poliomyelitis, and typhus fever, helps to make this book quite invaluable to both the student and the practitioner.

All of these subjects are brought fairly up-to-date. If one takes into consideration the statements in the author's preface, that the revision of the book was accomplished during his service with the United States army, "the copy prepared from memorandum notes at a base hospital, the 'galley sheets' read and corrected at a general hospital, and the finished pages read at two other general hospitals in succession," he cannot help marveling at the satisfactory way in which the revision was accomplished. Is it not regrettable that this work could not have been carried on free from the cruel disturbances of a horrible war, so that even the very recent researches and bibliographies might have been incorporated in so valuable a book?

In the chapter on yellow fever, Noguchi's researches on the leptospira have not been included. Nor is the classical monograph on gaseous gangrene by Weinberg and Seguin of the Pasteur Institute referred to in the discussion of the organisms of gas gangrene. Only one of their earlier articles is quoted. The definitely demonstrated powerful toxin of *B. Welchii* is only casually mentioned in a short citation from the work of Bull and Pritchett, 1917. This subject deserves greater study, for, undoubtedly, it would prove helpful toward a better understanding of many accident cases in civil practice which are due, as we have learned from our experiences in the war, to this form of infection.

Another chapter that is somewhat incomplete is the one on the streptococcus in which relatively little of the later literature is included. The slighting of this very important organism is a fault which this work has in common with nearly all text-books on the subject, a fact all the more remarkable since this micro-organism is of the greatest importance in producing an enormous mortality, as well as morbidity, in the human race. It is questionable if there is any organism that is so much responsible for human suffering as the streptococcus, not excluding even the tubercle bacillus.

As a whole, the present edition of the book, even more than its predecessors, recommends itself both as an excellent text-book and as a concise book of references.

—MOSES BARRON, M. D.

MEDICAL CLINICS OF NORTH AMERICA, Volume III, Number 6 (Chicago Number, May, 1920). By Chi-

cago Internists. Octavo of 286 pages, with 18 illustrations and complete index to Volume III. Philadelphia and London: W. B. Saunders Company. Issued serially, one volume every other month. Paper, \$12.00; cloth \$16.00 net. Consisting of six numbers per clinic year.

1. Dr. Charles Louis Mix discusses Lethargic Encephalitis and presents a case-history and examination in detail. The symptomatology, pathology, and differential diagnosis are taken up, as are the prognosis and treatment, in detail. Hexamethylinamine, neosalvarsan, and sodium cacodylate are suggested under therapy. The relation between this condition and epidemic influenza is also taken up.

Dr. Mix also presents a case of carcinoma of the posterior mediastinum, taking up the classification of mediastinal tumors and their symptomatology.

2. Dr. Arthur F. Byfield presents a paper entitled "An Analysis of the More Important Causes of Errors in Diagnosis." He especially emphasizes the failure to take complete case-histories and to perform complete physical examinations. He also takes up what he describes as "A Plus of Laboratory Detail and of Ultramodern Methods at the Expense of Sound Judgment and Good Sense," believing that this is a frequent cause of diagnostic error.

3. Dr. Isaac A. Apt discusses "Infantile Eczema," taking up protein sensitization, heredity, and the various vasomotor and metabolic disturbances. The several clinical forms are described, and a full discussion of the treatment and management is given in detail.

4. Dr. Charles S. Williamson presents a case of He also presents a case of pernicious anemia with lymphosarcoma of the neck, with careful detail concerning the differential diagnosis.

extreme dropsy suggesting organic cardiac lesion.

5. Dr. Solomon Strous presents several cases of urticaria and angioneurotic edema, discussing the etiology, treatment, and management of both conditions.

6. Dr. Peter Bassoe discusses brain abscess, with case-reports illustrating the various clinical and pathological types and their etiology.

7. Dr. Ralph C. Hamil presents three cases of cerebrospinal syphilis. The case-histories, physical examination, and treatment, including intraspinal therapy, are taken up in detail.

8. Dr. Walter M. Hamburger discusses the differential diagnosis of cardiac and gastro-intestinal lesions with particular reference to pectoral and extrapectoral angina. The fact that jaundice may occur in angina pectoris and so confuse the diagnosis is illustrated by several cases.

9. Dr. Milton Portis reports two cases of syphilis of the liver in which cholelithiasis was very closely simulated.

There are also case-reports and clinics by the following men which our limited space does not permit taking up in detail, Dr. James G. Carr, Dr. Clifford G. Grulee, Dr. Robert Sonnenschein, and Dr. Julius H. Hess.

This number also contains the index to Volume III.

—DONALD MCCARTHY, M. D.

REPORTS OF SOCIETIES

RED RIVER (MINN.) MEDICAL SOCIETY

The Red River Valley Medical Society held its midsummer meeting at Warren, August 12. In point of attendance the meeting was one of the largest in the history of the society.

The program consisted of clinics at the Warren Hospital and the following excellent papers:

1. Some Obscure Bone Lesions. By Emil Geist, Minneapolis.

2. Observations on Extra-uterine Pregnancy. By Dr. Theodor Bratrud, Warren.

3. Health Survey of Marshall County. By Miss Elizabeth Hanson, R. N., County Nurse, Warren.

4. Differential Diagnosis of Pulmonary Tuberculosis. By Dr. M. George Milan, Thief River Falls, Minn.

Special entertainment was provided for the visiting ladies.

NEWS ITEMS

Dr. R. C. Heron has moved from McVile, N. D., to north St. Paul.

Dr. I. W. Churchill has moved from Wessington, S. D., to Orient, S. D.

The Western Surgical Association will hold its annual meeting in December in Los Angeles, Calif.

Dr. William A. Bentley, a St. Paul pioneer physician, died last month in Los Angeles, Calif., at the age of 73.

The Montana Fellows of the American College of Surgeons will hold a meeting in Butte on the 3rd and 4th of this month.

Dr. B. F. Osborn has purchased the interest of his partner, Dr. C. C. Craig, in the Northern Minnesota Hospital at Baudette.

The opening of the new Miller Hospital in St. Paul, which has been delayed for many months is now promised for early November.

Dr. G. A. C. Cutts, formerly of Grove City, who spent the past year in California, has become associated with Dr. W. E. Chapman, of Litchfield.

The citizens of Chamberlain, S. D., have purchased the Chamberlain Sanitarium, and placed it in charge of Drs. B. E. Crawford and A. B.

Dunn, of that city. The capacity of the sanitarium is considerably over 100, and the cost of the transaction exceeded \$30,000.

Dr. Samuel H. Irwin, of Grand Forks, N. D., died last month at the age of 61. Dr. Irwin was a graduate of the Trinity Medical College of Toronto.

Dr. Blaine A. Young has severed his relation with the Hot Springs (S. D.) Clinic, and will confine his practice largely to hospital cases, both surgical and medical.

Dr. William Carter, who began his study of medicine in the University of North Dakota, and who had made a specialty of surgery, will locate at Hobson, N. D.

Dr. William Saxton, a recent graduate, who has just finished a year internship in a Cleveland (Ohio) hospital, has become associated with Dr. J. C. Shirley, of Huron, S. D.

Dr. G. J. Juckem has moved from Red Lodge, Mont., to Sheyogan, Wis., his former home. Dr. Juckem was connected with the Mount Maurice Hospital while in Red Lodge.

Dr. W. Stuart Leech, also has practiced in Minnesota many years, mainly at Brooten and Roseau, has moved to Safety Harbor, Florida, where he will "specialize" in oranges.

Dr. Nesmith P. Nelson, formerly of Washington, D. C., has located in Minneapolis, with offices in the Masonic Temple. His practice will be limited to eye, ear, nose, and throat work.

Dr. M. M. Hursh, of Grand Rapids, has purchased a lungmotor, and he will teach a number of people (mostly in the drug stores) to use it so that the public may have the benefit of it at all times.

Dr. N. Nedergaard, a recent graduate of the University of Minnesota, who studied tropical medicine in Paris, and who has been doing locum tenens work in Minnesota this summer, has gone to Cuba.

The twenty-first annual meeting of the Röntgen Ray Society will be held in Rochester and Minneapolis on the 14th to the 17th of this month, the first day being given to Rochester and the other three days to Minneapolis. The special address of the meeting, given by invitation, will be by Dr. Walter C. Alvarez, of the George Williams Harper Foundation of San Francisco, on "Gastro-intestinal Peristalsis." The scientific exhibit will be of special interest. Visitors will be welcome to all the meetings of the society without further invitation.

The North Dakota Fellows of the American College of Surgeons organized a state committee on clinical work last month at Bismarck. Drs. E. P. Quain and N. O. Ramstad, of Bismarck, are the chairman and secretary, respectively, of the committee. Dr. J. W. Bowen, of Dickinson, was elected counselor. A clinical meeting will be held in the state the coming fall or winter.

Dr. Joseph A. Blake, the distinguished surgeon of New York City, who has been in Paris for several years, will give an address before the Minnesota Pathological Society some time this month. The subject of his address will be "Some Considerations in Regard to Bone-Repair Following Fracture." Dr. Blake was a colonel in the U. S. Army at the head of a military hospital in Paris, and was made consulting surgeon for the District of Paris. The meeting of the Pathological Society will be an open one and all interested are invited to attend. The date of the meeting will be announced in our next issue.

The rumor that Dr. L. G. Rowntree, who has been head of the Department of Medicine of the University of Minnesota for the past four years, has resigned to become associated with the Mayo Clinic, has in it, unfortunately, an element of truth. Dr. Rowntree has resigned his present position for the purpose of becoming the head of the department of medicine for the Mayo Foundation, in which a part of the graduate work of the Medical School is carried on. He is thus not entirely lost to the Medical School, for he continues in the advanced work of the Foundation. In the absence of Dr. Rowntree, who has been in Rochester for the past five months on a leave of absence, Dr. G. Marx White, Professor of Medicine, has been the acting head of the Department.

EQUIPMENT AND FIXTURES WANTED

I want to buy set of good second-hand eye, ear, nose and throat office furniture, equipment, and instruments. Describe fully with price, listing separately and collectively. Address 360, care of this office.

X-RAY MACHINE FOR SALE

Snook open motor type apparatus, 6 kilowatt for 110-volt direct current, complete. Address Arthur B. Ancker, M.D., Superintendent City and County Hospital, St. Paul, Minnesota.

WANTS TO PURCHASE A GOOD PRACTICE

A young surgeon, who owns a \$11,000 home in St. Paul, wishes to go to a moderate-sized country town with hospital or hospital opportunities in the Northwest. Will trade his home or buy practice. Address 369, care of this office.

SUBSTITUTE WORK WANTED

A physician who has had ten years' experience and was in army service will do substitute work for a short time. Highest of references given. Address 377, care of this office.

PRACTICE FOR SALE

A \$12,000 cash South Dakota practice is offered for sale at the cost of equipment. Applicant must be registered in South Dakota, and should apply at once as the seller desires to go south soon. Address 378, care of this office.

FOR SALE—A SUBURBAN PLACE FOR DOCTOR'S HOME OR SANITARIUM

I offer for sale at a moderate price my residence and five acres of land with an excellent mineral spring. The house is beautifully situated on a hill with fine trees, hedges, shrubbery, and lawn. Garage for two cars and quarters above. Pressure system hot-water heat; fire-place; electricity, etc. Doctor's residence with arrangements for a few patients; not far from Minnetonka. Will sell, with furniture, on terms. Address 376, care of this office.

OFFICE POSITION WANTED BY GIRL

Has had one year's training in nurses' course at St. Mary's Hospital, and one year in office of an eye specialist. Can do typewriting and keep books. Lives at home. Address 375, care of this office.

RED RIVER VALLEY PRACTICE FOR SALE

Cash receipts for 1919, \$6,000. Nearest competition, 9 miles. Good schools. Practice given to purchaser of office building. Will also sell fine residence property if desired. Address 374, care of this office.

OFFICE GIRL AND STENOGRAPHER WANTS POSITION

Has worked two years with one and three years with another leading Minneapolis physician; is a high-grade stenographer; did emergency dressings in a surgeon's office; can give best of references. Address 380, care of this office.

PRACTICE FOR SALE

An unopposed village and county practice of over \$5,000 in Minnesota near the Twin Cities. Includes office equipment, stock of medicine, instruments, and two young horses. Collections, 99 per cent. Will give introduction. Reasonable terms. Going to Europe. Address 373, care of this office.

ASSISTANT WANTED WITH VIEW TO PARTNERSHIP

As soon as possible, a married man, graduate of A + school, as assistant in country and general practice, including surgery; town of 700 in eastern South Dakota. Will pay \$250 a month and furnish everything pertaining to practice. Opportunity for partnership later. Income from \$9,000 to \$10,000 a year can be increased proportionately by two. Address 379.



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Puffed Wheat is whole wheat steam exploded. It is made by Prof. Anderson's process.

The grains, sealed in guns, are revolved for an hour in 550 degrees of heat. The moisture in each food cell is thus changed to steam.

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DIAGNOSIS AND PROGNOSIS*

By W. H. BODENSTAB, M. D.

Medical Director The Provident Insurance Company
BISMARCK, NORTH DAKOTA

Diagnosis in medicine is the art or process of distinguishing between different diseases, and consists in employing our senses to determine the condition of the tissues. These may be altered in character, consistency, size, or location. We can often demonstrate such alterations by means of physical signs. The data thus obtained used in conjunction with a knowledge of the patient's history and symptoms, together with a familiarity with the pathology, often permit us to estimate very accurately the nature, character, location, and extent of the disease from which the patient is suffering.

Diagnosis is of fundamental importance in scientific medicine. The prevention of disease and the healing of the sick constitute the goal of medicine, but diagnosis is the course by which that goal is to be reached. Finally, a correct diagnosis is essential to a reasonable prognosis, since by this means only can we foretell the proper course of a disease,—whether it tends to recovery, to continuing disability, or to death.

It is not within the scope of this paper to enter into all the details of physical findings in the different diseases, or to endeavor to give you a lecture on physical diagnosis, but I simply wish to review, briefly, with you the more essential points in physical diagnosis and to remind you of the importance of a methodical examination whereby we can reduce our errors of omission and commission to the lowest possible per cent.

I can safely make the assertion that 75 per cent of our errors in diagnosis are not the result of ignorance but of carelessness on our part, or of a lack of a systematic procedure during the examination. The methods employed in physical diagnosis are the following:

- I. Inspection.
- II. Palpation.
- III. Percussion.
- IV. Auscultation.

The best results can be obtained by a systematic and routine inspection, beginning with the head and studying the eyes, ears, nose, throat, neck, and on down until all organs have been thoroughly examined. Although seemingly the most obvious, the simplest and the easiest of the four methods mentioned, accurate and skilled inspection, is, in reality, often the most difficult to acquire. It is in this method especially that the experienced practitioner often excels his younger confrère. The remark made by Corrigan many years ago still applies today: "The trouble with most doctors is not so much that they do not know enough, as it is that they do not see enough." I feel that I cannot over-emphasize the importance of careful, intelligent inspection, because this method of physical examination is too frequently omitted or made so hastily and superficially that little or no information is obtained. Inspection properly done yields more valuable information than any other procedure at our disposal with the exception of auscultation. Besides, it has this to commend it, namely, that no special training is necessary, and it re-

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quires no special technic, the only requirement being that we must constantly keep in mind that any abnormality or irregularity, however slight it may appear, is worthy of consideration.

In order that the best results may be obtained the patient should be stripped to the waist since an examination of the chest, which has not been entirely exposed, is often worse than no examination at all. In regard to women: I can safely state that no difficulty will be encountered if the importance of the procedure is thoroughly explained, and they are not unnecessarily exposed. My experience has taught me that men are more liable to raise objections than women.

I. INSPECTION

With reference to posture for the purpose of inspection: I much prefer to have the patient flat on his back with the head only slightly elevated by a small pillow. A good light is essential. The patient should be so placed that the light falls directly on the parts under inspection. In comparing the two sides of the chest, the light should not come from one side, as errors may occur if one side is not so well lighted as the other. The chest should be inspected, not only from the anterior and posterior aspects, but also in profile. The latter method is of value in estimating the depth of the chest and also in determining the presence or absence of pulsation.

Providing that the chest does not present some one of the recognized deformities, it is assumed that it is normal if it is symmetrical, although it is not possible to fix a standard of what constitutes a normal chest which shall serve as a criterion by which to estimate the existence of abnormal variations. A very small percentage of chests are absolutely symmetrical because of the respective muscular development in right-hand and left-hand individuals.

The points especially to be noted in inspecting the thorax are the following:

1. Size and development.
2. Contour and symmetry.
3. Mobility or degree of expansion.
4. Type of breathing.
5. Local bulging or pulsation.

1. *Size and development.*—Size and development of the chest depend to a great extent upon the general health and activity of the individual. We, therefore, have large, deep, well-muscled chests in robust physically active men. Small flat chests are usually seen in individuals who have spent long periods in bed, the result of diseases in early childhood, such as rickets, nasal

obstruction due to adenoids, etc. In adult life abnormalities are generally the result of tuberculosis, pleurisy, or emphysema.

2. *Contour and symmetry.*—It is of special importance that the two sides of the chest be compared with each other. Of course there is no normal standard, but because of the frequency of unilateral involvement in diseases of the chest, by choosing the better side we are able to estimate a given individual's normal. The point is particularly exemplified where there is retraction of one or the other apex, the result of tuberculosis. Curvatures of the spine frequently cause asymmetries, which of course must not be confounded with disease of the chest proper. The most common abnormal types are the long chest of tuberculosis, the barrel-shaped chest of emphysema and the rachitic chests, which include the pigeon breast and the funnel breast. The subcostal angle, the junction of the ribs and the sternum, is broad or obtuse in cylindrical or barrel-shaped thoraces, and acute or narrow in the long flat chest of tuberculosis. Prominence of clavicles is frequently of great value, particularly when it is unilateral, indicating a one-sided retraction of the apex as in tuberculosis.

3. *Mobility or degree of expansion.*—Chest expansion varies in different individuals, and is medically of minor importance. Individuals who are accustomed to severe physical exercise have a greater expansion than those who lead a more sedentary life. Inequality of expansion, however, is of the most important value, the main point being to determine which side expands the more. The most common cause of unilateral diminished or delayed expansion of the thorax is tuberculosis of the lungs, although the condition also results from one-sided pneumonia, pleural effusion, or pneumothorax. Thickened pleura and adjacent adhesions also tend to cause a diminished expansion on the affected side.

4. *Type of breathing.*—In men respiration is mainly abdominal, while in women it is costal. Where the abdominal walls are muscular and tense, costal breathing is the rule. The types of breathing are often modified by disease; thus in acute pleurisy there is diminished costal breathing, and in acute peritonitis there is diminished abdominal breathing. In asthma there is an intermittent form of dyspnea in which expiration is chiefly affected. The more common irregular types of breathing are the "catchy," the stridulous, the stertorous, and the Cheyne-Stokes. The most serious of these is the Cheyne-Stokes' res-

piration, which is of grave import and occurs in the coma of uremia, apoplexy, meningitis, opium poisoning, etc.

5. *Local bulging or pulsation*.—Local prominence in the thorax is frequently the result of rhachitis. During childhood a prominence over that portion of the chest overlying the heart is nearly always due to hypertrophy of the heart, particularly in children. The most important prominence is that found over the base of the heart in cases of aneurism of the aorta. Pulsations over the chest which are rhythmic in character nearly always indicate that they are directly connected with the circulatory apparatus. The apex beat is generally visible in the 5th interspace, from one to two centimeters to the right of the left nipple. Its position varies somewhat with posture; age also has some influence on its position, and we frequently find the point of maximum intensity as high as the fourth interspace in children, while in old people and in visceroptotics it can be seen as low as the 6th interspace. Pathological displacements are due to changes in the heart itself or to pressure or traction on the outside. The character of the impulse and its extent are best studied by palpation, although inspection enables us in many ways to determine that the impulse is extended, heaving, tapping, or undulatory. In cases of adherent pericardium there is marked systolic retraction in the region of the apex. This indrawing, together with a hypertrophied heart, is practically pathognomonic of adherent pericardium. The abdomen furnishes us many important data on inspection. Aside from distention due to gas or fluid, or retraction, as in meningitis, we are frequently enabled to see peristaltic waves, the result of obstruction, and local prominence due to exudates or tumors.

II. PALPATION

By palpation we mean the determination of the character of the tissues by the use of the sense of touch. It consists in the systematic examination of the surface of the chest and abdomen by the laying on of the hand. As in inspection we study the form, size, condition of the surface, and movements. By means of palpation we determine—

1. Character of the skin.
2. Local swelling, indurations, softening of the tissues, tenderness, or rigidity.
3. Vocal fremitus.
4. Cardiac impulse and pulsations.

5. Hepatic and splenic dullness, tumors, pulsation, etc., in the abdomen.

1. *Character of the skin*.—By means of palpation we are enabled to determine whether the skin is smooth or rough, dry or moist, hot or cold, and whether or not there is edema.

2. *Local swellings, induration, softening of the tissues, tenderness, or rigidity*.—These can only be determined by palpation. Softening or fluctuation in any prominence whatever upon the surface of the chest is an important sign. It may be due to abscess of the wall itself or to empyema necessitatis, cyst-formation, sarcoma, or perforating aneurism. The differential diagnosis rests upon the associated clinical phenomena. Tenderness or rigidity in the abdomen are of great importance, and can easily be determined by palpation.

3. *Vocal fremitus*.—The most important physical sign in the examination of the chest by palpation is vocal fremitus. The palm of the hand is laid upon the bared chest while the patient counts "one, two, three," or repeats some words as "twenty-one" or "ninety-nine." The vibrations of the vocal cords in phonation are transmitted along the walls of the trachea and bronchi and the column of air which they contain, to the chest wall, which is thus set into vibration from within. These vibrations are transmitted to the hand, and have been likened to the purring of a cat, although in the human being the vibrations are much finer and more rapid. Vocal fremitus varies in different regions normally, and is most distinct where the large bronchi approach the chest wall; consequently the vibrations are more intense on the right side than on the left, especially in the upper regions. This inequality must always be borne in mind. The pathological conditions that increase vocal fremitus, are consolidation of the lung and thickening of the pleura, whereas pleural effusions diminish or abolish it.

4. *Cardiac impulse and pulsations*.—Palpation of the cardiac impulse is generally more satisfactory than mere inspection and does not only confirm the data obtained by inspection, but may bring out other important phenomena. The examination of the cardiac impulse is of diagnostic importance, since it enables us to estimate the degree of enlargement or displacement of the heart, especially to the left and downward, and often to determine whether enlargement is due to hypertrophy or dilatation. In palpating the cardiac impulse one must always bear in

mind that the cardiac dullness extends from one to two centimeters to the outside of the center of the impulse or point of maximum intensity.

The exocardial causes of cardiac displacement are pleural effusion and transposition of the viscera.

In hypertrophy of the heart a forcible, deliberate, prolonged heaving impulse is felt, while that of dilatation often has an abrupt slapping quality. In cases of mitral stenosis there is usually a distinct thrill, presystolic in nature and corresponding to the presystolic crescendo murmur heard in auscultation. One can frequently feel a thrill in cases of mitral regurgitation of a marked degree and over the base of the heart in aortic stenosis.

5. *Hepatic and splenic dullness, tumors, pulsation, etc. in the abdomen.*—The abdomen should be palpated systematically with both hands. In this way peristalsis may be aroused and a tumor of the stomach, which would ordinarily not be observed, become noticeable. Tenderness, resistance, splashing, ascites, tumors, and postperitoneal lymphnodes are thus most easily recognized. The liver and spleen are best palpated by placing the left hand, palm up, in either flank. The patient is told to breathe deeply, at the same time upward pressure is made with the left hand, while the right one is placed firmly over the region of the gall-bladder or the spleen, as the case may be. With each inspiration an enlarged liver or spleen can plainly be felt as its anterior margin slips past under the fingers of the right hand.

III. PERCUSSION.

The practice of percussion demands nice training, both of the hands and the ear, in order to secure its best results. Neither percussion nor auscultation requires the possession of much technical knowledge of acoustics, nor a cultivated musical ear. It is, however, necessary to be able to discriminate differences in the character, intensity, and pitch of sound.

For the purpose of percussion and auscultation a sitting position is always preferable. There are numerous factors which must be taken into consideration when the patient is percussed lying down,—for example, the resonating properties of extraneous objects, such as the mattress, pillows, etc. The lower lung, while percussing a patient lying on the side, yields a slightly impaired note, due to the lessened amount of air it contains. Slight impaired resonance in one apex may be readily overlooked

if the patient is percussed lying down, but can be easily demonstrated in the sitting posture. In the lateral decubitus the breath-sounds in the lowermost lung tend to become muffled and feeble, owing to the decrease of tidal air, while in the uppermost lung their intensity may become increased. Finally, there is the advantage of having both sides of the chest before you under similar conditions for the sake of comparison. Never examine a case of severe lobar pneumonia with the patient in the sitting posture, as this procedure may be followed by sudden collapse. Two methods are employed, direct and indirect percussion. In direct percussion the blow is struck directly upon the body with the palmar surfaces of one or more fingers. The hand being slightly flexed and the palmar surface of the fingers held closely together, a blow is delivered chiefly from the wrist, care being taken to avoid too much force. This method is very satisfactory for a rapid preliminary survey of gross differences between the sides of the chest, or the upper and lower part of one side, especially posteriorly. For nice and accurate percussion, particularly in outlining the borders of the heart, I have used very successfully the one-finger percussion. The palmar surface of the middle finger is gently slapped against the skin forcibly enough to elicit resonance, the underlying structures at the same time imparting to the finger the sense of a certain resistance.

In indirect percussion the blow is struck upon some interposed body, which may be a plate or disk, or, what is commonly used in America, the first or second finger of the opposite hand. The sounds which are thus elicited are arbitrarily classified according to their acoustic properties as follows:

1. Tympany.
2. Hyperresonance.
3. Resonance.
4. Dullness.
5. Flatness.

No distinction can be drawn between these sounds, since they gradually merge into each other. There is no definite standard, and what one examiner might consider tympany, another of equal experience might declare to be hyperresonance.

Tympany is normally heard on percussing over the stomach and intestines, the larynx, and the lower anterior and lateral margin of the left lung owing to the proximity of the stomach and intestines. Pathologically it is heard over subcu-

taneous emphysema, pneumothorax, lung cavities in tuberculosis and bronchiectasis, and in the neighborhood of pulmonary infiltrations or above pleural or pericardial exudates, the so-called Skodiac tympany. Modified forms of tympany are metallic ring, bell tympany, and cracked-pot sound.

Resonance is the note produced on percussing normal lungs, and is best elicited below the clavicle. Hyperresonance is a term applied to a sound which acoustically lies between resonance and tympany, having some of the qualities of each, but failing to be identical with either. A characteristic example is found in pulmonary emphysema.

Flatness is a term applied to extreme dullness, and is heard when percussing over solid tissues or over fluid.

Dullness is heard when percussing over structures containing little or no air. There are several degrees of dullness, which acoustically lie between resonance and flatness. Pathologically we find dullness over consolidated lung tissue.

IV. AUSCULTATION.

Auscultation is the act of listening for sounds produced within the body, chiefly those of the heart and lungs and, to a less degree, of the abdomen. Whenever feasible, as stated before, have the patient in the sitting posture during the examination of the lungs, and in the recumbent position while examining the heart and abdomen. There are a few fundamental rules which are invaluable and should be systematically observed:

1. When examining the lungs determine by means of inspection, palpation, and percussion which side is affected, then begin with the healthy side.

2. We must concentrate our attention on the normal breath-sounds and listen for them, eliminating for the time being all other sounds from our consciousness.

3. After having determined the sound normally heard over pulmonary tissue (the vesicular murmur) we are enabled to differentiate from it any exaggerated, decreased, or absent breath-sounds. It must be remembered that the breath-sounds in children are increased in intensity, and are louder in women than in men, particularly in the upper anterior thoracic region and during expiration. This is due to costal breathing in women. Abnormal breath-sounds are more or less arbitrarily classified as bronchovesicular, bronchial, cavernous, and amphoric.

Bronchovesicular breathing is heard in bronchitis, bronchial or tubular in consolidation of the lung, cavernous over cavities, and amphoric, also over cavities, the difference lying in the metallic quality of the latter. Among the voice-sounds, which are elicited by listening over different areas of the chest wall while the patient speaks or whispers, the most important, and one which has helped me more than any other, is the whispered voice-sound or pectoriloquy. The other varieties are bronchophony and egophony.

Adventitious sounds heard over the lung in disease are more or less musical sounds which originate in the vibration of exudate in the respiratory passages. These are called *râles* and are divided into—

1. Sonorous, low-pitched, snoring in character.

2. Sibilant, high-pitched, and whistling or squeaking.

These two varieties constitute the so-called musical *râles*. Their sound is longer and more continuous, and is usually caused by a thin, tenacious exudate. They are characteristically heard in asthma and considerably influenced by coughing.

3. Crepitant, or fine consonating, chiefly inspiratory, clear-cut high-pitched *râles*, uninfluenced by coughing, are heard in pneumonia, tuberculosis, and pulmonary infarct.

4. Subcrepitant, coarser than the foregoing, of lower pitch, are heard in cases of bronchitis, pulmonary congestion, and edema.

5. Bubbling or gurgling *râles* are known as mucous or liquid *râles*. They are coarser and lower pitched than any of the others, and are heard over large bronchi or cavities and in cases of pulmonary edema. The so-called "death rattle" is due to liquid exudation in the trachea, and belongs to this class.

Friction sounds or friction *râles* are caused by the mechanical rubbing of two surfaces of inflamed serous membranes. They closely resemble crepitant and subcrepitant *râles*, and are found in cases of pleurisy, pericarditis, and, less frequently, in peritonitis.

The heart is ausculted to determine the character of normal sounds, the presence of abnormal sounds, and the regularity of the cardiac rhythm. The same rule applies in examining the heart as in lung examinations. We must concentrate our attention on the normal heart-sounds. These are studied as to their relative intensity, as there is no absolutely normal stand-

ard. Accentuation of the first sound is due to increased contractile force of the papillary and ventricular muscles. It occurs after exertion, during the early stage of fevers, during overaction, and in ventricular hypertrophy. Accentuation of the second sound indicates increased rapidity of closure in the aorta and pulmonary artery, the result of increased vascular pressure.

The second pulmonic sound is louder in the recumbent posture, and normally up to the age of 30; abnormally it is heard in conditions which increase the pressure in the lesser circulation,—for example, pulmonary consolidation, pleural effusion, mitral disease, and emphysema. The aortic second sound is increased in arterial hypertension, provided the ventricular strength be sufficient. This is common in arteriosclerosis and in nephritis.

If any one of the component elements producing the two heart-sounds falls out of time, a reduplication occurs, and two sounds are heard instead of one. The condition is known as gallop rhythm, and is frequently heard normally in children and in people with thin chest walls; pathologically, in arteriosclerosis, abnormal pressure relations, and conditions hastening or preventing a sudden increase in tension of the semilunar valves.

Whenever there is an abnormality in the contour or structure of a valvular orifice, or a roughening of the blood-channels certain abnormal sounds are produced, which are blowing in character and appear either in systole or diastole, or even extend over practically the entire cardiac cycle. These sounds are called murmurs, and are generally best heard at the point of the chest wall which is nearest to the orifice at which they are produced. It is essential in diagnosis to determine the location of a murmur, the exact time and duration in its relation to the cardiac cycle and the direction of its conduction.

A pericardial friction rub, due to pericarditis, can be differentiated from a pleural rub by the fact that there is a "to-and-fro" rub synchronous with the heart and not with respiration, and from endocardial sounds by the fact that it is not accurately synchronous with either systole or diastole, but often overlaps them both. A further difference lies in the fact that the friction rub tends to vary in quality and quantity, not only in the course of a few hours, but even at times from one heart-beat to another. Pressure with the stethoscope will frequently intensify a friction rub.

Auscultation of the abdomen has only a limited application. In obstruction of the bowel we may hear peristaltic gurgling; or in local peritonitis in the region of the liver or spleen we can frequently detect a friction rub. Attention should be called to one phenomenon which has frequently helped me in the diagnosis of general peritonitis. In cases of general peritonitis with obstruction one can nearly always hear the heart-sounds on applying a stethoscope over any part of the distended abdomen.

After a proper diagnosis has been made and before we presume to attempt to modify the progress of a disease by medicinal or other treatment, we have to ascertain what is its natural course when undisturbed by the art of medicine or surgery. It is this study that enables us to give to the patient or his relatives what is termed a prognosis of the case.

During the past few years I have been interested in medical life insurance, and I shall avail myself of this opportunity to briefly call your attention to the responsibility of the medical profession to an institution which has done more good to humanity than any other business enterprise. Life insurance has to do with prognosis. The point of view of an insurance company differs from that of a physician only insofar as the object of the examination is concerned.

The physician studies a patient to determine whether or not there is an impairment, and if present the nature of the same and its effect on a particular sickness.

The insurance company makes the same study to determine the degree of impairment and its effect on the length of life; in other words, if there is any impairment, what is the likelihood of its increase and what will it be in a given number of years?

The last two years will always be memorable ones in the annals of life insurance, not only on account of the great war, but also on account of the two influenza epidemics which have left in their wake mountains of grief and misery. Approximately six hundred thousand individuals lost their lives as a result of the influenza alone, for which insurance companies paid out in death claims over \$400,000,000. It is appalling to think what would have happened to the thousands of families of men who died in the prime of life had the latter not had the foresight to protect themselves through the beneficent institution of insurance. Furthermore, there can be no question but that life insurance companies have been

largely instrumental in favorably modifying death-rates in the United States.

The service rendered by the medical profession of this country towards life insurance companies in the past has made itself apparent in the great mortality savings, so that they were permitted to come through the dreadful influenza epidemics and stand the enormous financial loss without bringing about a national catastrophe. It stands, therefore, as an undisputed fact that the medical work, as rendered by our profession in the years gone by, has been of great value, even though this work in many instances could have been done

picture, and, in my opinion, possesses a broader view of truly appraising the life value of an applicant for insurance. According to the experiences of some of the larger insurance companies over 30 per cent of the total death losses were due to cardio-vascular-renal diseases. According to our efficiency cards the greatest inaccuracy and lack of definite information supplied by local examiners is to be found in the pulse rate and blood pressure readings, as well as the urinary analysis and the heart conditions. Permit me, therefore, to express a few remarks on these subjects from the life insurance standpoint.

DR. JONES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Age.....	40	25	31	19	24	24	30	27	25	37	27	30	27	32	21
Amount.....	2	2½	2½	3	1	2	2	5	1	2½	3	3	2	1	1
Sitting.....	72	72	76	76	70	74	74	68	66	74	80	74	66	80	80
Pulse Standing.....	76	72	80	82	72	76	76	68	68	76	84	80	68	84	84
After Examination.....															
Urine—Sp. Gr.....	1022	1020	1032	1024	1012	1022	1028	1024		1018	1020	1008	1026	1022	1012
Color.....	Straw	Amber	Amber	Light	Amber	Light	Amber	Amber		Light	Amber	Straw	Light	Amber	Light
100.2.....	99	98.2	99	98.6	98	98.2	97.6	98	98	98	98.2	98	97.8	98	98.6
Chest Expansion.....	4	4	3½	4	3½	4	6	4	4	4	3	5	3	4	4
Systol.....	130	118	118	136	117	117	116	118	118	130	107	110	122	130	114
B. P. Diastol.....	88	78	78	80	80	67	80	70	76	86	66	75	80	88	76
Pulse Pr.....	42	40	40	56	37	50	36	48	42	44	41	35	42	42	38
Over Weight—Under Weight.....										*					
Family History.....	B	B	B	A	A	A	B	A	A	A	A	A	B	B	A
Personal History.....	B	A	A	A	B	A	A	A	A	B	A	A	A	A	A
Rating.....	1st C	F C	F C	F C	F C	F C	F C	F C	F C	F C	F C	F C	F C	F C	F C
Remarks.....	to Fair			*								*	*		
Returned for Correction.....															
DR. BROWN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Age.....	57	43	26	30	38	30	24	22	37	20	28	30	39	40	25
Amount.....	5	1½	2	2	1	2	1	2	2	1	5	1½	2	2	2
Sitting.....	76	70	72	70	72	72	72	70	70	72	68	72	80	72	72
Pulse Standing.....	76	70	72	70	72	72	72	70	70	72	68	72	80	72	72
After Examination.....															
Urine—Sp. Gr.....	1015	1018	1015	1020	1018	1020	1015	1018	1015	1015	1015	1018	1020	1015	1015
Color.....	Amber	Amber	Amber	Amber	Amber	Straw	Amber	Amber	Amber	Straw	Amber	Amber	Amber	Amber	Amber
Temperature.....	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6	98.6
Chest Expansion.....	2½	3	3	3	3	3	3	3	3	3	3	3	2	3	4
Systol.....	105	130	120	120	120	125	115	115	130	118	120	125	120	130	120
B. P. Diastol.....	70	75	75	75	75	80	75	75	75	70	75	75	70	80	75
Pulse Pr.....	35	55	45	45	45	45	40	40	55	48	45	50	50	50	45
Over Weight—Under Weight.....															
Family History.....	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Personal History.....	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Rating.....	F C	F C	F C	F C	F C	F C	F C	F C	F C	F C	F C	F C	F C	F C	F C
Remarks.....															
Return for Correction.....	+														+

far better and more in conformity with the real facts. There is a great deal of room for improvement in the kind of examination reports submitted by a great many examiners. It is not always the most successful practitioner who makes the most satisfactory medical examiner for life insurance. Neither is the busy surgeon or the specialist in many of the individual branches of medicine the one who, generally speaking, furnishes the best report. A general practitioner who has given a great deal of time and attention to the study of internal medicine and diagnosis comes nearer rendering a true pen

The war has altered opinion of the value of many signs formerly accepted as important indications of the presence of organic heart disease. The chief sign involved in the changed point of view is the systolic murmur. The significance attached to diastolic murmurs has remained the same. Question 9, Part III, of our examination blank is as follows: "Are the heart sounds normal?" This is frequently answered by "No, systolic murmur." The examiner classifies the risk as "poor," and there is no alternative for the medical director but to reject the applicant.

The significance of systolic murmurs, espec-

ially their relation to mitral insufficiency, has caused a great deal of discussion. Systolic murmurs occur in so large a number of persons that it has become necessary to decide when they are important and denote mitral insufficiency. During civil life young men rarely sought medical advice on account of such murmurs until they were discovered as the result of life insurance or other accidental examinations. Early in the war these men were accepted and many were found, after severe service, to bear well the fatigue incident to campaigning. The conclusion, therefore, was drawn that the murmur in itself must in these instances be considered unimportant. Up to recently the classification of murmurs into "functional and organic" was the customary one, but it has been extremely difficult to decide which is functional and which organic. The following rules have been quite generally used by recruiting officers. A candidate may be accepted for service in the army,

1. If his heart is normal in size.
2. If there has been no history of rheumatism.
3. If the second cardiac sound is not accentuated.
4. If the response to a standard exercise test is normal, even though a systolic murmur is present.

A heart is normal in size if it measures from 9-11 centimeters across in civil life, and from 11-13 centimeters in active military service. A history of infection, particularly of rheumatic fever, tonsillitis, etc., is important unless there has only been one attack or so in childhood which was followed by no obvious cardiac defect. Accentuation of the 2d sound over the 2d left inter-space is usually evidence that there has been a prolonged period of disease, involving the endocardium, and that as a result of this infection some pathology has occurred which results in a more rapid closure of the aortic and pulmonary valves.

The introduction of the exercise test is important inasmuch as it gives information of what one desires to know as the result of the examination, namely, the ability to undergo exertion. The test consists in hopping 100 times on the left foot so that the shoulder is elevated from four to six inches. Two minutes after this test the pulse-rate should return to approximately the normal number of beats per minute, and the blood-pressure return to normal. The measurements are to be made with the patient in the recumbent position.

These tests are very simple, and can be made anywhere without the loss of much time. I feel that any applicant for life insurance who can successfully stand these tests should be considered a good risk.

The significance of urinary findings in life insurance examinations has been greatly modified in the last few years. You all remember not so long ago that an individual with albumin in his urine was relegated to the class of hopeless invalids. Life insurance companies refused to consider his application other than unfavorably, because it was difficult to believe that any urinary impairment, however slight, could warrant anything but unfavorable action. During the last twenty years we have gradually acquired a new view-point. Urinary impairments do not necessarily mean rejection. We are today in a position to grade urinary abnormalities into those which will not materially affect longevity and those which will be likely to shorten life. This has been accomplished through the intelligent chemical and microscopical study of the urine.

Albumin may be found in the urine as a result of disease of the urinary tract anywhere from the meatus urinarius to the remotest part of the kidneys. An old urethritis or inflammation around the neck of the bladder will cause a practically constant albuminuria. It, therefore, becomes necessary to determine the cause of the albuminuria, and decide whether or not the applicant has a pathological condition of his urinary tract which will in turn shorten his expectancy. Albumin and, at times, casts may be found in the urine of apparently healthy individuals after severe exercise, and whenever we find an applicant whose urine shows the presence of albumin and some casts his case should be followed up for a number of weeks or months. If the examination of several specimens during a period of several months shows that the albumin and casts have disappeared, we can safely consider this applicant for insurance. If, however, the albumin is persistent the risk should be rejected. Casts appearing intermittently in the urine call for a rejection.

Glycosuria is a more important and dangerous condition than albuminuria, especially in people under 40 and in heavyweights. Whenever sugar is found in the urine a second and third examination should be made, in order to determine whether it is only a temporary affair or whether it is a permanent one. It frequently happens that patients present themselves for ex-

amination, and sugar is found in the urine. They are sent to the hospital for treatment, where the most careful analysis fails to show even the slightest trace of sugar. Upon inquiry it is found that they ate a great deal of candy and sweets during their sojourn in the city with the result that sugar is present in the urine. A return to a normal diet will promptly eliminate all traces of glycosuria.

The specific gravity of the urine is entirely dependent upon the amount of solids it contains. A high specific gravity in the urine which is otherwise normal is of no importance. A low specific gravity may be important if it persists. We should make an effort to determine the cause of a persistently low specific gravity. If feasible a twenty-four hour specimen should be obtained or the urine examined after the applicant has abstained from taking liquids for a number of hours. If an applicant is first-class in every way but his low output of solids, and is under 40 years of age, he may be accepted as a good risk. After 40 the possibility of a beginning chronic interstitial nephritis must always be borne in mind, because of the difficulty of demonstrating albumin or casts in the fairly early cases.

Recognition of the significance of blood-pressure tests is perhaps the most important development of insurance medicine in recent years. There are two classes of blood-pressure cases: those where a high systolic and a normal diastolic pressure is found, and those where both the systolic and diastolic pressure are high. The former may be classed as functional cases and generally do well under treatment. The latter class comprises the serious cases which are not amenable to treatment, and it has been proven that high diastolic blood-pressure cases do not get well. It is, therefore, necessary, in order to be able to give a proper prognosis, that the diastolic pressure be carefully taken. I feel that most medical men are capable of correctly reading the systolic pressure, but the reports sent into the home office by some medical examiners lead me to believe that these same men are either not familiar with the technic or else they lack that precision and interest so essential in the successful life insurance medical examiner. To those examiners who are not familiar with the technic I shall be glad to send a form of instructions for blood-pressure readings, while to those who indiscriminately fill in the examination blank, irrespective of physical findings, I can only send a message of regret and solicitation, hoping that they may soon come

to a realization of the need of doing justice to the beneficent institutions which are doing so much to humanity.

DISCUSSION

DR. G. M. WILLIAMSON (Grand Forks): I would like to ask Dr. Bodenstab whether he has tabulated the records of examinations made by the two classes of examiners and how the mortality records compare.

DR. BODENSTAB: In answer to Dr. Williamson's question I will say that our company is still quite young, having been in existence only four years. During that time we have experienced a rather unnecessary mortality in several instances. I recall the death of a man of 45 who died of apoplexy six months after the issuance of a policy. Investigation proved that the doctor did not examine the applicant, but simply filled in the blank. This fact was admitted by the doctor himself. This same examiner recommended a woman for insurance, and stated over his signature that she was not pregnant. Several months later she died of uremia, and it was then ascertained that she was being treated by the examiner at the time she made application for insurance. We have on record several other cases, not quite as raw as these, but I cannot at present recall the details.

DR. WILLIAMSON: For the benefit of the members of the association, I wish to say that the State Board of Medical Examiners have a practical and oral examination which we conduct when the men come up for license. Up to last year in granting a license by reciprocity we accepted the practical and oral examinations conducted in other states. We have now ruled that out, and demand an oral examination and laboratory test from all applicants, no matter where they come from. It is surprising what a poor showing some men will make at this examination. We have found that some applicants cannot make even a practical urinalysis, and then they wonder why they are turned down when they come to North Dakota. It seems to me that no matter how long a man has been in practice if he cannot make a practical urinalysis he has no right to practice. That is certainly essential in life insurance examinations. We welcome good men to the state, and want as many as we can get in North Dakota, and the Board in marking papers are as liberal as is possible, but some things we cannot overlook. I am satisfied that if Dr. Bodenstab would tell us who the examiner was we could tell him some things. Some of the insurance companies write to me to get information about men applying for positions as examiner, especially those from low-grade schools, such as are not now recognized in the state. We are gradually getting away from that class. We are asking every man from Class B schools to write the examination so as to be sure that he is well qualified, and in the last few years we have been getting a splendid class of men, most of them coming from Class A schools. We are trying to maintain a standard equal to that of any state in the Union. In order for a recent graduate to procure a license in this state he must, as a preliminary education, have two years' study in a college of liberal arts, and his medical training must be at least four years' study in a first-grade medical college with an additional year as interne in an approved hospital.

DR. BODENSTAB: I am very thankful to Dr. William-

son for telling us of this condition, as it bears directly on what I have been trying to impress upon you in my paper. It does not seem possible that when a report comes into the Home Office of a negative urine, analysis shows at times large amounts of sugar or albumin, and yet that happens occasionally. I do not believe that these men are dishonest, but, rather, that they are not familiar with the technic of urinary analyses. I believe, too, that when we get blood-pressure readings where the systolic pressure varies from 125 to 165 and the diastolic pressure from 45 to 55, the man is not dishonest, but that he is unfamiliar with the technic of taking diastolic blood-pressure readings. It is a practical impossibility to find blood-pressure reading in six men in whom the systolic varies from 125 to 165 and the diastolic from 45 to 55. I have read a great many blood-pressures, but have never been able to substantiate these findings, nor have I found anyone else, familiar with the technic, who could. These men simply do not know how to take diastolic blood-pressure readings.

DR. JAMES P. AYLEN (Fargo): I would like to ask Dr. Bodensstab if he has personally tested out the rule regarding the return of the heart's action after one hundred hops on the left foot. In my experience in camps I saw a great many fellows put through that test, and I saw only a very few where they even approximated it. Very few men were able to hop on the left foot for one hundred times, and have it return in two or even three minutes after being at rest. I have not tried yet doing much life insurance and have not used

it in civil practice, and I would like to know whether it was peculiar to men in camp life because they were in a new environment and it was a new class of exercise and they were under mental stress. If Dr. Bodensstab has any personal experience with it I would like to know what he has to say.

DR. BODENSTAB: I am very much surprised at Dr. Aylen's statement of having found so few men in the army who favorably responded to the exercise test. The test as given in the Surgeon General's instructions consists in hopping one hundred steps on the left foot so that the shoulders are raised each time from four to six inches. The man is then put on his back and the pulse taken. Within two minutes the rate is supposed to drop to approximately normal, allowing ten beats in each case.

During the last two months of my service I examined a great many recruits and found very few physically fit men who did not return to normal after the test. The reference in my paper was to men who had systolic murmurs, and most of these responded favorably to the test, provided the readings were made in the recumbent position.

DR. JAMES P. AYLEN: We did not have an opportunity to rest our men on their backs. We did not utilize that, either at Fort Benjamin Harrison or at Camp Wadsworth; they merely sat down and I can now understand why the doctor's experience and mine differ so much.

ETIOLOGY OF CHRONIC HEADACHES*

BY FRANCIS A. BRUGMAN, M. D.

MINOT, NORTH DAKOTA

The subject of headaches is a prosaic one, but, nevertheless, it is one of extreme importance because of the prevalence of this annoying symptom, which very often defies the skill of the physician. In the past two decades much progress has been made in the matter of determining the pathological conditions responsible for the pain, but much remains to be done. Every headache has a cause, and, usually, this cause is amenable to treatment, but when we consider the fact that probably more "headache dope" is sold by druggists than any other remedy we are forced to the conclusion that we as physicians either do not know much about the cause of headaches or that we do not give these cases the careful consideration they deserve. There are so many factors entering into the causation, and so many different ways in which the pain may present itself that no particular pathological condition can be said to cause any particular kind of headache. Leftwich gives a list of 160 conditions which may cause headache, from

which some idea may be had of the problem confronting the diagnostician. Merely to enumerate these conditions would occupy the time allotted to this paper; therefore, of necessity, we must deal here with only those cases in which chronic headache is the presenting symptom and limit the paper to a differentiation of the more common causes. There are many rare conditions which are occasionally met with as the cause, but, if we can do something to aid the sufferers from the more common conditions, we shall materially reduce the number of habitual users of the coal-tar derivatives.

There are many classifications of headache as to cause, character, location, etc.

As to causes, we may consider them as reflex, congestive, toxic, and neurotic.

By *reflex* is meant that form due to nervous impulses transmitted from some other organ; *referred* may be a better term.

In the *congestive* type the pain is caused by an inflammatory condition in the area or along the course of the nerve supplying the area. The

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most common cause is some pathological condition in the nasal or paranasal cavities. It may be positive pressure in the sinuses due to swelling of the mucosa and retention of secretions or negative pressure due to absorption of the oxygen in sinuses whose ostia are closed by swelling of the mucosa. The last is referred to as *vacuum* headache. Sluder and others dispute the assertion that simple contact between the septum and the middle turbinate can cause headache; however, it can be demonstrated in several ways that such contact does cause headache which is relieved by proper treatment.

Headaches due to intracranial disease are also of the congestive type. The cerebral substance has no sensory nerves, but the coverings of the brain are well supplied. Under the congestive type would come the indurative, or rheumatic, headaches, which have been receiving more attention of late than heretofore. They receive their name because of the claim that small indurations or nodules can be palpated at the site of the pain. They have been recognized for years by Swedish masseurs, but their observations have not been such as to be readily accepted by medical men. There is apparently a chronic myositis at the site of the pain. I have had several cases which appeared to be of this type, but, aside from an occasional occipital lymph-node, I have never felt anything resembling nodules. Since the medical profession has taken the study of these headaches out of the hands of the masseurs considerable advance has been made, and they are now recognized to be of infectious origin, the teeth, tonsils, sinuses, etc., furnishing the original focus. Patrick's findings of leucocytosis and fever during the attacks in these cases confirm the theory of infection. Edinger goes so far as to say that this is the most frequent form of headache. The simplest way of confirming the diagnosis of a congestive headache is to increase the congestion by having the patient stoop over. The pain is of course greatly increased.

Toxic headaches are caused by a chemical disturbance in a nerve or a nerve center. It is very likely that many headaches from intestinal stasis, as well as those following alcoholic dissipation, are not caused by toxins acting on the nerve, but are of the congestive type, due to the swollen mucosa in the nose. The headache accompanying high blood-pressure and renal disease is probably toxic.

"*Neurotic*" is a term that is much misused. Our use of it is often a lazy way of taking a

short cut to a conclusion instead of the longer way round to a proper diagnosis. It stands to reason that even the headaches which must be labeled "neurotic" have some underlying pathology, else why should certain so-called neurasthenic conditions in different patients have the same symptomatology? Why should a patient complain of a lead-cap headache when he had never heard of such an ailment before, and why should other supposedly neurotic patients complain of identically the same thing? Is it not reasonable to suppose that it is because somewhere in the nervous mechanism there is a pathological condition common to all these cases? We do know that some people have more sensitive nerves than others and that certain conditions cause variations in the nervous irritability of the same person; therefore it is reasonable to suppose that what one person would consider pain, would scarcely be noticed by another; or what to one would be only slight pain would be considered severe by another. I do not mean that one magnifies the pain in his imagination; I mean that he actually receives a stronger stimulus, due to lower threshold values. We do know that symptoms are often magnified however; therefore this element must enter into the classification of the neurotic type.

No one headache can be confined strictly to any one of these four classes, for we often see a reflex headache from eye-strain become much worse during a cold in the head, which adds the congestive element, and it is an open question whether there is not a neurotic element in all headaches. That this is probable is shown by the fact that people known to be neurotic suffer most from headache, by the fact that emotional states predispose to headache, and by its prevalence during the age of puberty and during the menstrual period. Then, too, many people never have any disagreeable results from reflex and toxic conditions which cause severe headaches in other people.

The character of the pain is spoken of as boring, aching, throbbing, constricting, dull, sharp, and various other self-explanatory terms. They have some diagnostic significance, but not without other data. This may be said of the different localizations, unilateral, frontal, temporal, vertical, parietal, and occipital. Even fairly recent works on diagnosis lay too much stress on the location.

Since headache is a subjective symptom, we must rely on the statement of the patient to obtain the information that will give us a clue to

the cause. It is true that by means of radiography, refraction, urinalysis, spinal puncture, etc., we are able to confirm our diagnosis; but it is obvious that, if we are going to apply these objective tests, we must first decide on a probable diagnosis of the cause, and to this end the following points must be taken into account: age, sex, occupation, frequency of the attacks, time of day, location of the pain, and association with certain acts or phenomena.

Age.—Very young children are not definite about the location of pain. They often complain of headache when suffering from earache. Ocular headaches are seldom complained of before the school age. Serious intracranial conditions cause such pain as to be easily noted by the expression on the child's face. Fundus examination is imperative in every young child complaining of headache. In children the most common cause is eye-strain; next, adenoids. Reflex headaches are most frequent about the age of puberty, when there is a neurotic tendency; in adults, eye-strain at any age, but especially after thirty-five, when presbyopia begins and small errors of refraction are not so easily compensated for, is a leading cause. During the menstrual period reflex headaches are more easily excited because of the tendency to disturbance of the nervous control. There is a possibility of toxicity in these cases. In women with pelvic derangements the engorgement of the pelvic organs at this period would intensify the reflex causes. Migraine disappears during the fifth decade. High blood-pressure must always be thought of in middle-aged and elderly patients. Old people seldom have ocular headaches, because the ability to strain the eyes is lost. Usually a serious cause must be looked for. By all means take the blood-pressure of these patients.

Occupation.—This is principally of use in ruling for or against ocular headaches. People with sedentary occupations are more liable to intestinal intoxication and chronic catarrhal conditions in the upper air-passages.

Frequency of attacks.—If very rare, they are seldom ocular, but are usually toxic. If frequent, they are ocular or nasal, or due to high blood-pressure, to pelvic derangements in women, to auto-intoxication, to supra-orbital neuralgia or may be of the indurative type. The two last named are accompanied by local tenderness.

Constant.—If constant they are due to empyema of the accessory sinuses of the nose in which event local tenderness is present, or to

cerebral disease, such as tumors, syphilitic or tuberculous meningitis, syphilitic osteitis, and cranial depressions.

Time of day.—If headache is present on arising, it is probably due to sinus involvement, but this is not always the case, for it is common to find headaches of nasal origin coming on after the patient has been up for several hours. In a patient with an eleven o'clock headache not associated with use of the eyes, look in the nose for the seat of the trouble. Intestinal stasis is a very common cause of morning headache, and is usually relieved by evacuation. In these cases, as well as in the headache following alcoholic indulgence, I believe the real direct cause is in the swollen mucosa in the nasal chambers. Morning headaches may be ocular if the eyes have been used much during the night previous.

Coming on later in the day.—They are principally ocular, especially if one's occupation points that way. In women who are much on their feet pelvic disorders may cause headaches, but whether toxic or reflex we are not prepared to say. Neurotic subjects are more prone to afternoon headaches because of the nervous exhaustion, bright sunlight, etc. Nocturnal headaches suggest syphilis, but too much stress should not be put on this feature. It is usually accompanied by other prominent symptoms of cerebral syphilis.

Location, frontal and temporal.—These are usually of ocular origin, and, if so, they are always bilateral except when due to a diseased condition, such as glaucoma in one eye. Frontal sinusitis and supra-orbital neuralgia are unilateral. Toxic headaches from any cause may be frontal. Unilateral headache is never due to eye-strain and (with the exception of true migraine which does not come within the scope of this paper) is always due to some pathological lesion in the same side of the head.

Most headaches are frontal, and the thought immediately strikes the investigator that there must be something unusual about the nerve supply of this region. Why should this one branch of one particular nerve be the chief offender above all the sensory nerves of the body? No other nerve in the body goes on a rampage so often and for so many various and trifling causes. The supra-orbital is a branch of the ophthalmic branch of the fifth nerve. The ophthalmic leaves the Gasserian ganglion, and passes forward through the sphenoid fissure lying against the wall of the sphenoid sinus. The supra-orbital passes along the floor of the frontal sinus. Other

branches of the nerve are distributed to the mucosa of the nose and the sphenopalatine ganglion lies in close relation to the accessory sinuses; and the frequency with which these sinuses are diseased makes it apparent that headaches of reflex ocular origin cannot be properly studied without taking into account the rhinological features. As for the physiological aspect, we may be justified in assuming for this nerve a special high plane as a sensory nerve. Crile has shown that the body guards its most vulnerable parts by means of a particularly sensitive nerve supply. If this is true, why should not the nerve which guards the most valued and highly developed of the special senses be the most sensitive of all nerves—a sort of hair-trigger nerve, as it were? According to Head the nerves of the cornea have a lower threshold value than other nerves, and the corneal nerves are branches of the ophthalmic. Thus we find this region, which is the site of so much pain, supplied by a hypersensitive nerve, which is so situated as to be subject to more harmful influences than any other nerve in the body.

Vertical.—This type of headache may be neurotic or toxic (often from teeth), due to sphenoidal sinusitis and pressure of the middle turbinate on the septum. Inserting a cotton-wound applicator between the septum and the middle turbinate will cause a most excruciating exacerbation of the pain in these cases. Indurative headaches are sometimes vertical.

Occipital.—These are sometimes ocular, especially if due to imbalance of the extrinsic muscles. It is also a favorite site of indurative headache, in which case it usually radiates downward in the neck. It is sometimes due to chronic mastoiditis or to pelvic disorders in women. Neurotic patients commonly complain of pain at the "base of the brain," meaning the occipital region.

Among the acts and phenomena which accompany, bring on, intensify, or relieve headache may be mentioned menstruation, constipation,

biliousness, sensitiveness to light, and many other things which will aid in determining the cause and which are usually mentioned by the patient of his own accord as he himself has noticed their connection with the headache. Exacerbation of the pain on bending over points to nasal or sinus involvement. Automobile mechanics complain of this frequently, for their work on engines is done in that posture. Headaches coming on while riding on a train are ocular in origin, and known as the panorama headache. Automobile riding has the same effect, but, in addition, the exposure to the wind causes the pain over the area of the chronic sinusitis. This is a very common complaint. Nausea, aside from the projectile vomiting of cerebral disease, points to eye-strain, particularly to muscle imbalance. During the acute attack occurring in chronic frontal sinusitis, vomiting is often present and occasionally in other headaches. Aspirin, which is commonly taken for relief, sometimes causes gastric distress and vomiting, which should not be confused with vomiting accompanying the headache.

In conclusion, I wish to repeat that in a paper of this length no attempt can be made to take up any except the most common types, but it is in these cases that we can do the most good to the greatest number; nor is there time to mention the numerous methods by which we may arrive objectively at a definite conclusion as to the cause of any one particular headache, but their application is indicated according to the subjective findings in any given case.

The object in presenting this paper will have been achieved if the idea has been conveyed that the determination of the cause of chronic headaches is far from a simple matter and that the patient should be encouraged to submit to a complete examination. A careful consideration of the features of each case will do much toward bringing to light the cause of many headaches which would otherwise go unrelieved.

COMMON PEDIATRIC PROBLEMS*

J. J. TILTON, M. D.

SPOKANE, WASHINGTON

The future of the nation depends on the physical, mental, and moral development of the children born today, and it behooves us as scientific practitioners of medicine to get behind any movement to improve them. To say "Bring a child up in the way it should go, and it will not depart therefrom" is true, but there has been considerable error in the bringing up, in too many cases. If the present rate of existence progresses as rapidly and in the same channel in the next two decades as it has in the last half, the children born today will require the digestion of a goat, the nervous system of an elephant, and the endurance of a pinto to stand the pace. Those not so fortunately supplied will be in our sanatoriums.

The good old days when granny chewed our food for us were less insane, and yet we sit idly by, in too many cases, saying nothing while our property is bled to the quick, in taxes, for appropriations for rivers and harbors, stock improvement, arid lands, etc., with nothing for public health, sanitation, or child welfare in a well-organized manner.

We hope the propaganda for a cabinet member in medicine will bring results. We are also delighted with the elimination of teaching medicine by didactic lectures exclusively. We believe the time is not too far distant when those of us styling ourselves specialists will be required to take degrees in the specialty chosen. It is pleasing to note that many of the best colleges today are going into the specialties very extensively, where the student is required to make diagnoses and take care of certain cases. In children they are required to treat the sick, to prescribe the feeding of infants and growing children, and to have the benefit of following up their cases.

We shall touch on the subject matter lightly as time demands, in two sections, the first the well child, and, secondly, a few of the more common ailments one sees in the every-day work.

Prophylaxis is the ideal in medicine. People generally like it and do not object to paying for it. Many people come in with what they believe to be a perfectly healthy baby or child. They want it looked over, and will say: "Doctor, tell us how to raise this child in the best way; it is in your care, and we expect you to take full

charge of the case." Some do not use just those words, but with the proper enlightenment, the same result will be obtained. It is not enough to give them a few general ideas without first having gone over the case fully. To do this one must take a full and complete family history, make a thorough examination and keep systematic records for future reference.

The information should be explicit, preferably written. One may get a sensible diet list from any modern work on pediatrics, suitable to any age after the nursing period. In this connection it might be well to emphasize that nothing at all is to be taken between meals, excepting water to drink. Candy should not be had at all, and ice-cream and fruits should be served with the meals. The amount and manner of serving should be carefully considered. Children eat small portions, but like them well prepared and daintily served. Cereals, for instance, should be cooked three hours in a fireless cooker or a double boiler, and served with whole milk and no sugar. No drink should be had with meals except milk or cocoa made with milk and water. If a properly balanced ration is had physics are seldom needed.

Sleep varies with the age of the child, but to say that a child gets the same number of hours sleep in twenty-four is not sufficient. It must have the same hours. Children of any age should be in bed by nine in summer and eight in winter, and the younger ones should go earlier. They should not be permitted to go to shows, parties, or other places where there is any excitement at night, and will be better for having had their play at home in the daytime and with a few playmates.

The so-called diseases of childhood are preventable in many cases, and most of the others they have are due to the ignorance of the parents. We believe, in summing up the case of the well child, it is safe to say that wholesome food properly prepared and served, regular hours, suitable clothing, and keeping away from crowds and excitement, will keep them well in most instances.

The sick child is a different problem, and is the one most seen by those doing general work. Like the well child one needs a complete history and examination with records. In the examination is where the greatest errors in diagnosis are

*Presented at the annual meeting of the Montana State Medical Association, Helena, Mont., July 14 and 15, 1920.

made. One should follow a definite plan. It is the rule in our work to strip the children, get the weight correctly, if in the office, and then watch the child, lying undressed for a minute or so, to get any characteristic pose and the presence of skin lesions, hernia, or deformities. After this the abdomen is palpated for masses or tenderness. This is done, first, because the child is apt to cry soon, which would render palpation useless. Next the reflexes are examined. Following this, one begins with the head and takes each member and organ in order as they are approached, winding up with the superficial glands. By following this simple plan one will find many conditions that would be otherwise overlooked.

It is quite common to be called in to see a baby with a very high fever without other manifestations. In a case of this kind it is well to look to the ears. An electric otoscope is one of the most valuable instruments for those seeing babies to have in the grip. With it one can examine the ears quickly and easily without discomfort to the child. If the membrane is bulging and reddened with landmarks not visible, it is well to do a paracentesis, after which the most accepted plan is to irrigate them every three hours with sterile boric-acid solution, leaving the canal open for free drainage. In cases where the membrane is not bulging, but is red around the margin, with a mild fever, the case may be aborted with hot normal saline irrigations four times a day, using a quart or more of solution at a time. In addition to this, keep a hot-water bottle or other dry heat applied locally. Olive oil and laudanum will not relieve the pain more readily than the irrigations and heat, but will complicate matters greatly if the membrane should rupture. Mastoids seldom become involved, but one should bear them in mind, and be especially suspicious if the discharge should continue for a long time, or a profuse one should cease suddenly with a rise of temperature.

Another very common cause for fever, with little symptoms except high fever is pyelitis. You may see an intestinal disturbance in these cases, and, if the history is carefully taken, there will have been similar attacks in the last few months. The urine will not show pus in every specimen. It is best to ask for two or three samples. The treatment is well established, and consists of potassium citrate or urotropin according to the reaction of the urine. These drugs should be given in large doses, especially if the case is well marked. One must not neglect to tell the parents

this is a condition that will require months to treat properly, and that frequent examinations of the urine should be made after the child is its normal self again. Some of the more recent investigators contend that it is not curable. It occurs more frequently in girls than boys. I have only seen one boy so affected.

The nose and throat infections are probably the most common conditions one sees. They are sometimes called common colds, and too often let alone until there have been complications that are troublesome and sometimes serious. There are usually two or three degrees of fever and a profuse nasal discharge accompanied by a hacking cough, which may or may not interfere with sleep. If you examine the nose you will find the membrane bathed with a mucopurulent discharge and, if cleansed, the tissue is red and angry and will sometimes bleed. The throat will be in the same condition with the tonsils swollen. If the tongue blade is put far enough back to make the patient gag, you will see the same discharge trickling down. Many times this infection is located, primarily, in the adenoid tissue, and extends to the adjacent structures. The chest is usually clear, and the cough is from the irritation of enlarged tonsils and discharge. One should culture all these throats, to rule out diphtheria. If it is not present the method of treatment is a simple one. The patient should be kept in bed, with fresh air and given nourishing food, encouraging drinking to a considerable amount. Argyrol in 10 per cent strength used freely in each nostril four times a day and applied with a medicine dropper while the child is lying down, gives very satisfactory results, and will usually clear a case up in two or three days. The cough is not usually a troublesome factor, and can be relieved with a mustard plaster applied locally. It must be remembered the argyrol will color the stool and frighten the mother if she is not warned. We do not give any medication internally.

One must not overlook the possibility of sinus involvement in these cases. It is not common in little children, but must be suspected if the discharge continues long and is purulent. If in doubt an x-ray will clear up the difficulty, if one is not in touch with a nose and throat specialist.

Middle-ear abscess is a common complication and is to be suspected in case of a rapid rise of temperature. A child subject to these attacks should have its adenoids removed upon recovery from the acute condition.

Another condition we see very frequently is vomiting, coming on without any provocation. We may call it cyclic, although I do not believe it to be true cyclic, as manifested by acidosis, since there seems to be little true acidosis in this locality. For want of a better name, I have called it pseudo-acidosis. The attacks may come on at any time, and the child will vomit everything taken without any apparent cause, beginning suddenly while on the usual articles of diet that have been agreeing nicely. One usually sees the child the next day, and the history is vague as to any reasonable cause. The mother can tell nothing but that the child began to vomit, and has continued to do so with each ingestion of food or drink. On examination the child looks pinched, and the usual turgor is not present. In the majority of cases this is not the rule. The acetone odor is not present in the expired air, there is not the air-hunger, nor is the carbon dioxide altered as in true acidosis. You will usually find considerable acetone in the urine, and diacetic acid may be present. This, together with the vomiting, is frequently all that can be found on the most careful examination. There is certainly something out of balance with the acetone bodies, in these cases; but I have found no satisfactory explanation. Cases of this type, as a rule, are easily handled. The child should be put to bed and food withheld for a day. It may be well to wash out the stomach in some cases, using about 4 per cent sodium bicarbonate solution, leaving two or three ounces after the water has returned clear. Many times this is not necessary, since the patient will take the soda solution by mouth without vomiting. It must be borne in mind the water is as essential as the alkali, and both must be gotten into the system in some manner. A 1.5 per cent solution may be injected subcutaneously. After twenty-four hours food may be given, well diluted if the patient is a nursling, and preferably Eiweiss or buttermilk in older children. If there are no complications they are usually their normal selves in three or four days.

I have found no other drug as valuable as soda, and have come to use none other. Physics are not given at all in these cases. I believe they do harm by increasing water elimination. The usual sedative drugs, intestinal antiseptics, etc., have proven valueless.

Colic is another condition which makes grey hair appear earlier than it should. We seem to see it most commonly just after the mother is getting about from her confinement. It is apparently due to decomposition of food, from lack

of digestive development. The mother is usually more or less disturbed by the new routine, especially if the first child. This on her part certainly is a contributing factor. I do not believe, as is maintained by many, that her diet has anything to do with it so long as the things she eats agree with her and she is not constipated. The best advice for her is to keep cheerful and away from excitement or worry and to take considerable exercise, not to fatigue. If the baby gains at all artificial feeding is mentioned only to be condemned. Curds and green stools are not sufficient reasons for weaning.

Aside from the things already mentioned for the mother, she must be assured the baby is not sick and will do well. Put the baby on a four-hour feeding regime, allowing more time for digestion, nurse absolutely on the minute. Hold the baby in the upright position for a few minutes, for the expulsion of gas, after nursing; put it to bed, and let it alone. If these simple measures do not give relief, soda or soda mint tablets dissolved in water may do some good. If the colic is quite severe an enema of warm water may help to expel the gas from the lower bowel. Paregoric relieves temporarily, but makes the matter worse after its effects have subsided. Physics are of no value. Heat locally will relieve some cases. If the child is weaned you will have more trouble than before. This is certainly a definite condition, due partly to the mother's milk, digestion, habits, and nervous system, and partly to the baby's digestion. It must be met on the merits of the case and treated accordingly.

One might continue indefinitely with conditions along this line, and any of them would offer some point of interest, but it is not possible to cover all subjects in one discussion. I have chosen these because they are common and as some of them are overlooked, I felt they would be of more interest to you than a possible scientific discussion of something you might not see in a long time.

In conclusion I wish to leave this thought with you. The main point in the handling of children is to keep them well. If they must be sick, nursing, food, and fluids are the remedies for first thought. Drugs are valuable aids, but cannot be considered first except in the case of specifics, and they should not be used at all if they interfere with nourishment. I am sure children are over-medicated frequently, and this disturbing of digestion is a serious consequence. We hope something has been said, or will come from this, that will aid you in your work in the future.



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A JOYOUS POLITICAL PLAY

The country is now in the throes of a rather more happy type of hysteria than some types noted in our previous issues, and the political candidate is in his, or her, element. One often wonders why Briggs, the cartoonist, does not draw something to illustrate "I wonder what the candidate thinks about." It would be very apropos, for we all wonder what the candidate is thinking about, and we can readily see his gyrations, his vaulting without a pole, his long jumps, and various acrobatic stunts; but most of all and best of all is his ability to hoodwink his audiences. When the final analysis is made, the difference between any two political candidates is reduced to almost the zero line, called by neurologists the "mental threshold." And yet each one, be he seeking a petty office or the highest office in the land, feels called upon to give his views on every possible subject under discussion. He thinks he is creating an "atmosphere"; and so he is, but it is composed largely of overheated air. He thinks that he is making an impression upon his hearers; and so he does, but it may be the very opposite from that which he expects. He depends, however, for most of his success upon enthusiasm and hysteria, and it is very rarely that a crowd of men or women get together to hear a public man that they do not give evidence of certain types and grades of hysteria. True, this hysterical element may be of a resentful type from some quarters, and no

candidate expects to convince his entire audience that his theories and his opinions are the only ones that are worthy of consideration.

As one of the candidates has recently said, we must depend a good deal upon the newspapers for our propaganda; and so we, in turn, get most of our information from the daily press. How good it is and how true it is we must take on faith, for it has been found, not occasionally but frequently, that the report of a correspondent does not always bring out the thoughts of the speaker. However, when some ponderous man speaks in serious tones upon an important subject, the gist of the idea gets into the public press, and then the uproar begins. Those who are opposed to the speaker say that he is contradictory, that he does not express the wish of his party, or that he is a dreamer, and that his logic and reason are not true, or that he is dominated by elements which are supposed to be in control of the whole situation. The other man, who is not so pompous, and who is a good mixer and a popular candidate, goes about the country and makes all sorts of accusations, some of which he is able to substantiate or at least he thinks he is, and the rest are up for criticism; and so the opposition party jumps all over his active body, and the lie flies back and forth between the two interested orators and, naturally, creates a hubbub of excitement and denunciation between the committeemen who have the whole thing in charge.

It is the same old mud-slinging, back-talk, slap-stick, and so-called solemn assertion of facts that we have heard from year to year during every presidential campaign. And the funny part of it all is that 95 per cent of everything you get is pure and unadulterated bluff. The Lord must have created this political situation with a twinkle in his eye, knowing that it would be a compilation of misstatements, of vituperation, abuse, and wind. And yet we all fall for it, one way or another. It is amusing to see how very little we think for ourselves, and how often we are carried away by the plaudits of an audience and by the rotund remarks of a speaker.

These little hysterical seances are perhaps good for us; at least they create sufficient excitement, exaltation, hope, and expectancy to furnish us with entertainment for many weeks. Fortunately, our recovery is prompt when the election is over, and, again fortunately, we accept what is handed to us by the majority of the voters.

At the present writing there is much hysteria with some neurasthenia about the collection of sufficient money to manage the campaign, and it

is laughable to hear one party abuse the other for spending money for either propaganda or educational purposes. If one stops for a moment to realize how much it will cost this year to notify each voting individual by postal card, one need not be appalled at the few millions that have to be raised by both sides. The figures show that twenty-seven million people, men and women, are entitled to vote in November, and if twenty-seven million postal cards are sent out with a one-cent stamp, these alone will take \$270,000. Then, if these voters are notified again by a letter, that means \$540,000, a simple problem in arithmetic. The renting of offices, the meeting of committees, and the other necessary expenses, must all be given due credit, and whether it costs three million dollars or fifteen million dollars to run a presidential campaign is immaterial. In the present state of affairs, there is no graft in this sort of propaganda. It is money that is difficult to acquire and easy to spend, yet from the expression of the various candidates one would think the country was lining itself up against one of the most sinful practices ever put before the people of the country.

Do you remember the little girl who got up on Friday afternoon to speak her little piece in school, when she said, "The lips that touch wine shall never touch mine"? She is simply an example of the form of hysteria which has taken on great proportions in a political campaign, but means nothing. The medical profession, those who are interested in principles of psychology, whether of Henry James' type or that of some later writer, will have a very entertaining two months. The Republicans with all the awe and dignity that they can assume, the Democrats with all their skillful buffoonery, the Prohibitionist with his already acknowledged short list of adherents, and the so-called Socialists who think they are socialists, but who if they had money would not give it up for anything, are going to expound their policies with a revibratory voice that will carry from one end of the continent to the other, and they will all sit back with a smug, silly smile of satisfaction, each believing that his own cause is just, when, as a matter of fact, he is simply having a fit and will get over it in due time.

MEDICAL SOCIETIES OF THE FUTURE

The time has come when every medical journal should call the attention of its readers, and particularly the secretaries of other county societies, to the necessity of better organization and

greater attendance. This, the editor fully appreciates, is not an easy task, and the man who, as secretary of the society, does his work conscientiously and faithfully, has about all the work he can do. But the responsibility of the attendance lies with the "other man," and sometimes the "other man" puts off attending his own district or county society meetings. He does it for reasons that seem to him quite proper, but to the secretary it means added burden and responsibility. He is not able to keep up his attendance, and the result is he is not able to present a proper program for the members who are present. The attention of our readers is called to a recent article in *THE JOURNAL-LANCET* reporting the Southern Minnesota Medical Society and its meeting at Fairmont. In this article an attempt was made to give a report of what had been done to make that society so successful. The same thing applies, in a modified way, to all county and district societies.

The beginning of a new medical year in a society is always a slow and more or less difficult problem, and it means that everyone must do his share of the work, and assume his share of the responsibility for the organization, programs, and attendance.

We are all a little prone to think we are necessary in our communities and that the society will get along for a night or two without our personal attention, but, as a matter of fact, and this is carefully analyzed, our patients will get along just as well if we go to a medical society meeting occasionally, or regularly, even if they are acutely ill. It takes but little time and it puts a little more life and better spirit into the medical man when he attends a meeting of his fellows occasionally. We all need to hear other men talk, and particularly to participate in the discussion of a medical topic. This can be done only by taking a personal interest in the whole matter.

Proper organization and attendance upon the part of a local society is helpful to the state organization, and keeps the membership in closer union. It makes the work of the president and secretary and the various committees of the state association very much easier to handle. Unless all this is carried out as it should be, the interest in the state association lags. It has been lagging more or less during the last four or five years, due to unpreventable causes, but this year there seems to be no question but what every state association should spring into interesting activities.

The writer wishes he could impress upon all

of his readers the value to the essayist himself of reporting cases or the reading of papers. It is of great educational value, it stimulates the individual to better work, and he learns in this way to present his cases concisely and in a condensed form. The long-drawn-out papers which we are obliged to hear sometimes are far less interesting than those of the snappy type where a man reports his own personal experience, and he is perfectly sure that if his experience is of no value he will be promptly made aware of this fact by the discussions. And no doctor should feel hurt if he is criticized for the work he is doing. This is the underlying principle of standardization, and, if it is continued in the proper spirit, the society and the individual become standardized to that degree which makes them useful and helpful medical factors.

It may be unwise, and perhaps unnecessary, to suggest to the societies that the selection of their officers is quite as important as the conduct of their meetings. The presiding officer should be a man who is alive to the work, and the secretary a man who is willing to work and who is known as a man who does his work thoroughly and promptly. An illustration of this is the rapid publication of papers by the *Journal of the American Medical Association*. They are able to publish these papers because the secretaries are instructed that all papers shall be prepared and handed in immediately after they are read in the sections. An example of the other kind is that which happened to the Twenty-first Annual Conference of the American Hospital Association, which held its meeting on September 8 to 12, 1919, in Cincinnati, Ohio. Its report comes to its subscribers on the first day of September, 1920, one year after the meeting was held. Of course, many of the papers were published in hospital journals, but the record and the proceedings were not printed and put before the members until one year after the papers were presented. Such a thing occurred in the American Neurological Association this year, and the editor's explanation was that the members of the Association who had papers and who neglected to correct their discussions were solely to blame for the lateness of the transaction. Nowadays, with the rate of progress, medical literature becomes stale within a year, and there are not many enduring articles. And to prevent this, our county societies and district organizations should send in their work very promptly, otherwise the state medical journal will not be able to print it before it becomes obsolete.

REPORTS OF SOCIETIES

AMERICAN RÖNTGEN RAY SOCIETY

Members and guests of the American Röntgen Ray Society will arrive in Minneapolis by special train from Rochester, Tuesday evening, Sept. 14, and the scientific sessions will begin promptly at 9 o'clock the following morning (this morning, Sept. 15).

In the late afternoon of Wednesday a drive will be given by the members of the Hennepin County Medical Society, and this will be followed by an informal dinner and dance at the Lafayette Club. The formal dinner of the society will be given Friday night at the Curtis Hotel, the chief speakers at the banquet being Dr. Leopold Jaches, of New York, who will discuss the development of the Röntgen ray in Germany since the war; Dr. Walter Hill, who will tell about Röntgen ray's recent developments in England and France; and Dr. Coolidge, whose name is well known to all röntgenologists.

Other speakers of note, who will be heard during the meeting, will be Dr. Robert Knox, of London, England; Dr. W. H. Stewart, of New York, who will discuss the value of pneumoperitoneum; Dr. G. E. Pfahler, who will talk upon "New Röntgenographic Technic for the Study of the Thyroid"; and Dr. W. W. Watkins, who will speak on "Syphilitic-Tuberculous Symbiosis in the Lungs."

Other special guests of the Society will be Dr. Dallas B. Phemister, of Chicago, who will discuss, "Studies on the Reduction of Bone Density"; and Dr. Walter C. Alveres, of the University of California, who will give the Caldwell Lecture on, "Peristalsis in Health and Disease."

THE CLINICAL CLUB OF MINNEAPOLIS

The Clinical Club of Minneapolis held a very snappy opening meeting on Thursday, September 2, 1920. A splendid supper served promptly at 6:30 permitted the members to recount some of their interesting experiences of the vacation months.

The principal feature of the evening was a thesis by Dr. Frederick H. K. Schaaf, a recently elected member, entitled, "The Differential Diagnosis of Pericious Anemia, with Special Reference to the Luetic Anemias." This was followed by a discussion of the various points developed by the speaker. After the meeting adjourned

officially the members remained for an hour enjoying the fellowship which such an organization necessarily promotes.

—J. WARREN BELL, M. D.,
Secretary.

THE MISSISSIPPI VALLEY CONFERENCE ON TUBERCULOSIS

The Mississippi Valley Conference on Tuberculosis met in its eighth annual session under the presidency of Dr. John H. Peck, of Des Moines, September 2, 3, and 4, 1920, in Duluth. The attendance was fairly good, 329 being registered.

The Mississippi Valley Sanatorium Association, which meets as a section of the Conference, held its meeting at Nopeming Sanatorium (St. Louis County Sanatorium, near Duluth) September 3.

At this session of the Association were discussed the following subjects of special interest to sanatorium workers:

Rest and Exercise in the Treatment of Tuberculosis.

A Daily Program for Sanatorium Patients.

Management of Refractory Cases.

Tuberculin.

Pneumothorax.

The Clinical Section of the Conference with Dr. E. L. Tuohy, of Duluth, as chairman, discussed interesting phases of the treatment of this disease.

Dr. H. E. Robertson, Professor of Pathology, University of Minnesota, presented a very valuable paper on "Inferences Regarding Tuberculosis Drawn from Pathological Examinations."

Dr. Wallace Cole, of St. Paul, discussed "Tuberculosis in Children."

Dr. John H. Crewe, of Rochester, made a presentation of his treatment, which is a distinct departure from the generally accepted treatment of tuberculosis in that he employs elimination by sweating by means of hot baths and hot packs.

Dr. Geo. Douglas Head, of Minneapolis, presented a paper on the "Early Diagnosis of Tuberculosis."

Dr. A. L. McDonald, of Duluth, had a paper on the "Relation of Maternal Welfare to Prevention and Early Recognition of Tuberculosis."

Dr. W. F. Braasch, of the Mayo Clinic, gave a paper on "Renal Tuberculosis."

There was an interesting discussion on the "Differential Diagnosis of Tuberculosis and Chronic Gas-Poisoning," presented by Dr. F. W. Spicer, of Duluth. This discussion brought out the fact that, while these gas cases showed a

comparative low incidence of tuberculosis a year or more ago, the same observers were noting today a considerable percentage of tuberculosis in the ex-service men who were gassed.

The following subjects were also presented at this Clinical Session:

"X-ray in the Diagnosis of Tuberculosis," by Dr. R. G. Allison, University of Minnesota.

"Tuberculous Laryngitis," by Dr. C. M. McCaskey, Indianapolis.

"The Use of Iodine in the Treatment of Tuberculosis," by Dr. E. S. Mariette, Minneapolis.

"The Value of Sodium Morrhuate in Pulmonary Tuberculosis," by Dr. Max Bresenthal, of Chicago.

"Heliotherapy at the Adams Memorial Hospital," Perrysburg, N. Y., by Dr. J. L. Kuth, of Duluth.

"Röntgen Therapy in Tuberculosis," by Dr. T. R. Martin, of Duluth.

In the Nurses' Section and the Sociological Section various subjects of vital interest to public health nurses and social workers in tuberculosis were presented. Plans were discussed for the prosecution of the Christmas Seal this next year.

Mr. Chas. M. DeForest, of the National Association, who has been putting on throughout the country the "Modern Health Crusade in the Schools," was present and gave an account of the development of this work. This is probably the most effective public health endeavor that has ever been put across in the country and is awakening wide interest in the schools.

Other subjects presented were as follows:

"Open Air Schools," by Mrs. Ira Couch Wood, of Chicago.

"Industrial Hygiene and Home Environment," by Dr. Robert Olson, of Madison.

"Nutritional and Related Clinics," by Dr. W. Pearce, of Minneapolis.

"Tuberculosis Clinics," by Dr. Russell E. Adkins, of Springfield, Ill.

A symposium on "Winning Public Approval and Support on Tuberculosis Work."

A symposium on "Reaching Every Tuberculosis Patient," under which was discussed the role of the public health nurse, the tuberculosis consultant, sanatorium extension work, etc.

In the Nurses' Section the problems which the nurse meets in the field were brought up, and apparently a good deal of helpfulness to the various workers resulted.

Dr. J. W. Marcley, of Minneapolis, opened a discussion on "How Can the Public Nurse Best Co-operate with the Sanatorium,"

Dr. Walter McNabb Miller, Executive Secretary of the Missouri Tuberculosis Association, was elected president for next year, and the meeting will be held in September of next year at Cedar Point, Ohio, a health resort on Lake Erie, not far from Sandusky.

NEWS ITEMS

Dr. J. A. Roy has moved from Argyle to Stephen.

Dr. A. I. Arneson, formerly of Emmons, has begun practice in Austin.

Dr. H. A. Fasbender, a 1919 graduate of the Medical School of the University of Minnesota, has located at Hastings.

Dr. Gilbert Kvitrud, of St. Paul, has returned from the East, where he has been doing postgraduate work. Dr. Kvitrud is associated with Drs. Robert and George Earl.

Dr. Hal Downey, Professor of Animal Biology in the Medical School of the University of Minnesota, has been engaged for a month in research work at the Mayo Clinic.

Drs. E. J. Huenekens, Max Seham, and C. R. Moriarty announce that they will hereafter be associated in the practice of diseases of children, at 538 La Salle Building, Minneapolis.

Dr. John C. Adams, of Superior, Wis., died last month at the age of 56. Dr. Adams had practiced over twenty-five years in Superior. He was a graduate of Bellevue, class of '88.

Dr. H. V. Hanson, of Hutchinson, expects to take an extended postgraduate course at the University of Chicago granted by the Government to disabled soldiers in the World War.

Dr. Harry E. Miller, of Rochester, has purchased the practice of Dr. H. G. Blanchard, of Waseca, whose retirement was recently noted in these columns. Dr. Blanchard will settle in California.

The Northern Minnesota Hospital of International Falls has passed into the hands of Dr. Osborn through the purchase of Dr. Craig's interest in the hospital. Dr. Craig will continue in private practice.

The attorney general of Minnesota has given an opinion to the effect that a physician cannot purchase liquor and leave it with a patient. He can write a prescription for it, but he cannot fill his own prescription.

Dr. C. P. Robbins, of Winona, spent a month in the East investigating new instruments in electrocardiography. He visited the manufacturing establishments and a number of hospitals where the instrument is used.

The old Brown-Redwood Medical Society, whose charter was withdrawn last year by the Minnesota State Medical Association, has been superseded by the Redwood-Brown Medical Society, organized last month.

The Huron (S. D.) Medical Society held a regular meeting in Huron on September 2, when papers were presented by Dr. L. G. Hill, of Sioux Falls, on "Nasal Surgery," and by Dr. F. D. Gillis, of Mitchell, on "Osteomyelitis."

The annual meeting of the Minnesota State Medical Association will be held in St. Paul on September 29 and 30 and October 1. The meetings will be held at the Old Capitol building, and the headquarters will be at Hotel St. Paul.

The remains of Dr. William L. Cowper, of Michigan, N. D., who died last year in Liverpool, England, were interred at Michigan, N. D., last month. Dr. Cowper died at the age of 45, and had practiced in North Dakota for twenty years.

The officers of the new Redwood-Brown Medical Society, formed in those counties to take the place of the Society whose charter was revoked, are the following: President, Dr. C. C. Walker, Lamberton; secretary and treasurer, Dr. W. A. Meierding, Springfield.

Dr. J. H. P. Gauss, who has been doing work as a Fellow in Medicine, Section of Röntgenology, at the Mayo Clinic, has located in San Jose, Calif. We shall soon publish a paper by Dr. Gauss on the röntgenological diagnosis of gastric carcinoma.

The first meeting of the Montana Fellows of the American College of Surgeons was held last week in Butte, Mont. The attendance was good, the clinics excellent, and the interest great. We shall give a further account of the auspicious event in our next issue.

Dr. J. Harlan Stuart, of Minneapolis, died on August 31 at the age of 84. Dr. Stuart was a graduate of Bellevue, class of '67, and came to Minneapolis in 1882. He was twice president of the Hennepin County Medical Society, and was a highly respected physician and man.

The Baker-Bartholomew school for backward and nervous children, which opened in Minneapolis on the first of the month, has already shown the urgent need of such a school. It is

quite probable that the capacity of the building will not be able long to care for the number of children applying.

Dr. C. C. Hoagland, formerly located at Veb-len, S. D., after completing a year of post-graduate work at Manhattan Eye, Ear and Throat Hospital, New York City, has located at Madison, S. D., where he purchased the eye, ear, nose and throat practice and equipment of Dr. H. H. Frudenberg. Dr. Frudenberg has moved to Minneapolis.

Dr. Harry R. Nordley, of Minneapolis, died last week at the age of 33. Dr. Nordley was a graduate of the University of Minnesota Medical School, class of '12, and had practiced two years in Blackduck before coming to Minneapolis. He served in the late war, and at the time of his death he was assistant to the Minneapolis City Chemist.

Dr. George J. Hanley, of Great Falls, Mont., has located in Ellendale, N. D. Dr. Hanley is a graduate of Bellevue. Besides a wide experience in the hospitals of New York City, he was for four years assistant city and county physician in St. Paul. He has also done post-graduate work in New York City, at Johns Hopkins, and in Philadelphia.

The eighth annual meeting of the Mississippi Valley Conference on Tuberculosis was held at Duluth the first of the month, and the delegates were royally entertained. Twin City men took a prominent part in the work of the conference. The outstanding features of the discussions were the standardization of sanitariums and earlier diagnosis of the disease. We make further reference to the meeting in another column.

The Minnesota Academy of Medicine held its annual business meeting on September 1. The address of the retiring president, Dr. H. B. Sweetser, of Minneapolis, was given, and a committee on revision of the by-laws and constitution was appointed. The following were elected officers for the current year: President, Dr. Warren A. Dennis, St. Paul; vice-president, Dr. J. Frank Corbett, Minneapolis; secretary-treasurer, Dr. Fred E. Leavitt, St. Paul.

It is now announced from Rochester that Dr. Leonard G. Rowntree, Professor of Medicine in the Medical School of the University of Minnesota, and Dr. Reginald Fitz, associate in medicine of the Massachusetts General Hospital, have joined the staff of the Mayo Foundation and the Mayo Clinic at Rochester, Minn. Drs. Rowntree and Fitz will be associated in the further de-

velopment of research in internal medicine and in the hospital care of medical cases in the Mayo Clinic.

The Graduate School of the University of Minnesota will offer a nine months' preliminary course of graduate work in ophthalmology and otolaryngology. The course will consist chiefly of advanced work in the science departments, giving fundamental training essential to this specialty. The course is not intended to prepare students to enter private practice, but is designed to serve as a basis for further thorough clinical training. Such training may be obtained by service as resident in a special hospital, or by acting as assistant in a clinic of recognized standing, or by service in a fellowship under the University of Minnesota Graduate School plan. The course will begin September 29. Requests for information should be addressed to the Dean of the Graduate School, University of Minnesota.

PHYSICIANS LICENSED TO PRACTICE MEDICINE IN MINNESOTA

At the June (1920) Examination

BY EXAMINATION

- Andrews, Clayton Farrington, U. of Pa., M. D., 1916, Rochester, Minn.
- Brown, Richard Joseph Carroll, U. of Minn., M. B., 1920, 608 E. 14th St., Minneapolis.
- Deane, Helen M., U. of Minn., M. B., 1920, care University Hospital, Minneapolis.
- Drips, Della G., U. of Minn., M. B., 1920, Rochester, Minn.
- Foster, William Kerr, U. of Minn., M. B., 1920, 714 University Ave. S. E., Minneapolis.
- Gutsell, Robert Squier, U. of Minn., M. B., 1920, care St. Luke's Hospital, St. Paul.
- Kriz, Rose Alice, U. of Minn., M. B., 1920, 3826 Vliet St., Milwaukee, Wis.
- McCartney, James Shearer, Jr., Johns Hopkins, 1917, Rochester, Minn.
- McFarlane, Lloyd E., U. of Minn., M. B., 1920, 509 River Road East, Minneapolis.
- McKinlay, Chauncey Angus, Kansas University, 1916, University Hospital, Minneapolis.
- Myers, Jay Arthur, U. of Minn., M. B., 1920, General Hospital, Minneapolis.
- Richdorf, Lawrence Francis, U. of Minn., M. B., 1920, care University Hospital, Minneapolis.
- Rypins, Harold Levi, Harvard, 1919, 210 S. Victoria St., St. Paul.
- Ziegler, Lloyd Hiram, U. of Minn., M. B., 1920, 4544 45th Ave. S., Minneapolis.

BY RECIPROCITY

- Baldwin, Otis Johnson, Marion Sims, 1903, Coleraine, Minn.
- Busman, George J., U. of Mich., 1918, Rochester, Minn.
- Derauf, Benjamin Irving, U. of Iowa, 1919, Brainerd, Minn.
- Goeckermann, Wm. Henry, P. and S., Wisconsin, 1906, Rochester, Minn.
- King, Frank Lambert, Pulte, 1888, Timber Lake, S. D.
- McCall, Harry Kenyon, U. of Illinois, 1901, 305 First National Bank Bldg., Waterloo, Iowa.
- Page, Clarence Vernon, U. of Iowa, 1902, Sheldon, Iowa.
- Rowley, Walter Nelson, Northwestern, 1918, Rochester, Minn.

LOCUM TENENS WANTED

For one month, beginning October 10 to 15, in general practice in Southern Minnesota. Will pay cash. Address 389, care of this office.

PHYSICIANS WANTED

Two excellent unopposed locations in Minnesota towns with splendid farming community. Collections 100 per cent. Nothing to buy—step right in and make money from the start. Address 388, care this office.

MINNEAPOLIS OFFICES FOR RENT

Two offices and waiting-room for one physician offered for rent in the Pillsbury Building, Minneapolis. Address or call upon Dr. H. H. Thompson, 813 Pillsbury Building, Minneapolis.

ELECTRICAL APPARATUS FOR SALE

Meyer's Interruptless Transformer No. 2, 220 volts; also tube stand, gas tubes, hand fluoroscope, intensifying screen, and cassette, all practically new. For further information, address Dr. H. G. Noble, Brookings, South Dakota.

PHYSICIAN WANTED

Wanted in a live western North Dakota town a physician who will locate there at once. Good location, and no competition. Graduate from an A-1 school preferred. Address 385, care of this office.

PHYSICIAN WANTED

To locate in a good farming and ranching country in North Dakota; large territory and people all well-to-do; good crops. For particulars address 386, care of this office.

PRACTICE FOR SALE

In North Dakota. An unopposed town and country practice of over \$7,000 cash yearly. Surgeon can make more. Rich farming community; A-1 roads; collections 99 per cent; free rent; hospital promised; good school, churches, beautiful natural scenery. Nearest doctor sixteen miles. Established practice of fourteen years. Will sell for less than cost of office equipment and drugs and thoroughly introduce. Going to specialize. Address 382, care of this office.

PRACTICE FOR SALE

Unopposed village and country practice in North Dakota amounting to \$7,000. Practically no competition. Small investment; sure income. Address 390, care of this office.

HOSPITAL STERILIZERS FOR SALE

Scanlan-Morris high-pressure hospital sterilizers, two five-gallon water-tanks, and one utensil steam, one instrument sterilizer, electric. Bargain. St. Luke's Hospital, Minot, N. D.

EQUIPMENT AND FIXTURES WANTED

I want to buy set of good second-hand eye, ear, nose and throat office furniture, equipment, and instruments. Describe fully with price, listing separately and collectively. Address 360, care of this office.

X-RAY MACHINE FOR SALE

Snook open motor type apparatus, 6 kilowatt for 110-volt direct current, complete. Address Arthur B. Ancker, M.D., Superintendent City and County Hospital, St. Paul, Minnesota.

RED RIVER VALLEY PRACTICE FOR SALE

Cash receipts for 1919, \$6,000. Nearest competition, 9 miles. Good schools. Practice given to purchaser of office building. Will also sell fine residence property if desired. Address 374, care of this office.

OFFICE GIRL AND STENOGRAPHER WANTS POSITION

Has worked two years with one and three years with another leading Minneapolis physician; is a high-grade stenographer; did emergency dressings in a surgeon's office; can give best of references. Address 380, care of this office.

PRACTICE FOR SALE

South Dakota practice of \$8,000 to \$10,000 a year. Town of 700 in beautiful prosperous country. Will either sell excellent equipment, including drugs, for cash invoice and rent office-residence for present or sell everything on terms to suit responsible party. Here is a fine opportunity. If you have the means act quick. Address 384, care of this office.

ASSISTANT WANTED WITH VIEW TO PARTNERSHIP

As soon as possible, a married man, graduate of A + school, as assistant in country and general practice, including surgery; town of 700 in eastern South Dakota. Will pay \$250 a month and furnish everything pertaining to practice. Opportunity for partnership later. Income from \$9,000 to \$10,000 a year can be increased proportionately by two. Address 379.

FOR SALE—A SUBURBAN PLACE FOR DOCTOR'S HOME OR SANITARIUM

I offer for sale at a moderate price my residence and five acres of land with an excellent mineral spring. The house is beautifully situated on a hill with fine trees, hedges, shrubbery, and lawn. Garage for two cars and quarters above. Pressure system hot-water heat; fire-place; electricity, etc. Doctor's residence with arrangements for a few patients; not far from Minnetonka. Will sell, with furniture, on terms. Address 376, care of this office.



One-Cent Hearty Breakfasts

Quaker Oats costs one cent per large dish. It forms almost the ideal food in balance and completeness.

One chop would cost about 12 times as much. And each egg costs some 4 or 5 times a dish of Quaker Oats.

Quaker Oats, in calory value, is twice as rich as round steak.

Yet it costs about one-tenth what meat and egg foods cost.

Folks should remember in these high-cost days that the greatest food that grows still costs but little.

At this writing, this is what some necessary foods cost on the calory basis.

Cost per 1,000 calories

Quaker Oats	-	-	-	5½c
Average Meats	-	-	-	45c
Hen's Eggs	-	-	-	60c
Chicken up to	-	-	-	\$1.66

Quaker Oats

Extra-flavory flakes without extra price. They are flaked from queen grains only—just the rich, plump, flavory oats. We get but ten pounds from a bushel.

The Quaker Oats Company

Chicago

PUBLISHER'S DEPARTMENT

CAMPHO-PHENIQUE

The manufacturers of Campho-Phenique call special attention to this preparation as a speedy cure for poison from such plants as poison ivy, poison oak, and poison sumac, when used in the liquid form. It is equally efficacious in the poison from bites and stings of insects.

Such tests as the above are easily made, and the preparation that gives a quick and certain cure has valuable properties in many other places than those named.

Generous samples and literature will be sent upon request by The Campho-Phenique Company, of St. Louis, Mo.

DIPHTHERIA AND SMALLPOX

Epidemics of diphtheria are usually initiated by the opening of the public schools. The incidence of the disease increases until November, remains at a maximum until January, and then slowly declines. And while the danger from diphtheria is much less than it was twenty-five years ago it is still a source of hazard to children of school and pre-school age especially.

More than 250,000 cases occur annually in the United States, and of this number more than 10,000 die. Only in that period immediately following the introduction of antitoxin was there any marked decrease in the case occurrence and mortality rate. Without denying the progress which has been made in the control and prevention of the disease, it cannot be said that we have advanced as far as we should with endemic diphtheria. The largest single factor responsible for the stability of the morbidity and mortality percentages is the ignorance of the public on the benefits to be derived from the use of antitoxin both as a therapeutic agent and as a prophylactic agent for those recently exposed. The recognition of the importance of medical attention by the laity in every case of sore throat in a child and *prompt* use of *sufficient* antitoxin by physicians in every case which simulates diphtheria would do much to reduce this factor in the death rate to small proportions.

An antitoxin of high potency, small bulk, and low total solids is supplied by Eli Lilly & Company, Indianapolis. This product is prepared under the most careful conditions and in accord with the most improved methods of concentration. In addition to its dependable efficacy it is supplied quite readily through the drug trade, thus meeting on demand the needs of the physician.

THE RIVER PINES SANATORIUM

We have used in these columns in the past few years not a few very complimentary words about the above-named sanatorium, which is situated at Stevens Point, Wis., and we have done so for the benefit of our readers and their patients, and because every such word was deserved.

We want to say now, from the same motives, that an auto ride over to the sanatorium, even for a distance of one or two hundred miles, will pay any physician, for he will receive a cordial welcome and will learn in a couple of hours' talk with Dr. Coon, the medical director, more than he can learn from books in a week.

An occasional visit of this kind to any institution conducted by a specialist is worth while. Why not, Mr. General Practitioner, make some visits of this character? It would be a joyous ride on an autumn day.

VACCINE THERAPY

An advance step in vaccine therapy is evidenced in the treatment of colds by vaccines to guard against the dangerous infections that often follow colds. A cold in itself is not generally dangerous, but a very large number of deaths annually follow simple colds which often terminate in pneumonia, so that every cold is potentially dangerous. Therefore early immunization against the infection that may follow a cold is imperative, especially in individuals known to have a lowered vitality.

A polyvalent vaccine is the best guard against respiratory infections.

Dr. G. H. Sherman, of Detroit, Mich., manufactures a stock polyvalent vaccine that is highly recommended in the treatment of all colds as it gives a degree of immunity against bad after effects almost equal to the smallpox vaccine. Dr. Sherman will be glad to send literature on this subject to any physician.

MOOR (MUD) BATHS

Waukesha, Wisconsin, is the home of more health resorts and sanatoriums than any other place in America. It is noted for its beautiful surroundings, its climate, and its mineral waters.

One of the leading of these resorts is the Moor (Mud) Baths, which give such satisfactory results in the treatment of rheumatism, lumbago, neuritis, diabetes, liver troubles, etc. This is the Grand View Health Resort, conducted by the Waukesha Moor (Mud) Bath Company. A golf course, tennis courts, and other forms of recreation are furnished, and there is every opportunity for the run-down man to build himself up.

Inquiries for detailed information will receive prompt and full attention, and should be addressed to the Company at Waukesha, Wis.

SHARP & SMITH

For over three-quarters of a century (1844-1920) the above firm has made and imported high-grade surgical instruments and hospital supplies for the physicians and surgeons of the West and Northwest, and no firm has stood higher with the profession. This is indeed an honorable career, one that commends the firm to the younger men in the strongest possible way, and it says to such men that anything new offered by this firm may be purchased without hesitation or examination if its purpose makes it seem to them worth buying.

THE TRI-IODIDES

The iodides have long held a recognized place in medication, and Henry's preparation, known as Tri-Iodides, has been found to be very valuable in both acute and chronic diseases of the bones and joints, rheumatism, gout, eczema, and all skin diseases arising from blood disorders.

The general physician, as well as the specialist, finds the old stand-bys of medicine, such as the iodides, the dependable ones, and will not surrender them for new things until thoroughly proven by years of use and close observation.

ANTI-RABIC VIRUS---Full Course Treatment - - - \$25.00

As improved and made under the personal supervision of Dr. D. L. Harris. (U. S. Government License No. 66.) **YOU GIVE THE TREATMENT YOURSELF.** Sole Distributors. Telegraph orders given prompt attention. Write for Booklet.

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We do the classical test. Any of the various modifications will be made upon request, without additional charge.

Sterile containers, with needle, gratis upon request.

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Accurate histological descriptions and diagnoses of tissues removed at operation should be part of the clinical record of all patients.

Sterile containers for the collection of all specimens sent gratis upon request.

Routine laboratory examinations made at reasonable prices. Send for fee list.

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Three recommendations are made—

Stop at once the giving of milk.

Thoroughly clean out the intestinal tract.

Give nourishment composed of food elements capable of being absorbed with minimum digestive effort.

A diet that meets the condition is prepared as follows:

Mellin's Food 4 level tablespoonfuls

Water (boiled, then cooled) 16 fluidounces

Feed small amounts at frequent intervals.

It is further suggested:—As soon as the stools lessen in number and improve in character, gradually build up the diet by substituting one ounce of skimmed milk for one ounce of water until the amount of skimmed milk is equal to the quantity of milk usually given for the age of the infant; also that no milk fat be given until the baby has completely recovered.

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The Deeds Laboratories, of Minneapolis, in order to meet a really urgent need now carry a complete line of all the commonly used laboratory stains and test solutions, so that the physician doing his own laboratory work can have at hand these stains and solutions ready to make his examinations without doing the tedious details necessary in their preparation.

The Deeds Laboratories are doing high-grade work, and are now well established with the profession of the Twin Cities, as well as with many other physicians in the Northwest.

Their offices are in the Pillsbury Building, Minneapolis, and they are doing a general laboratory work.

ANGIER'S EMULSION

The various vegetable and other emulsions were never so extensively used by high-class physicians as today, and none of these pharmaceuticals stand higher in the esteem of the profession than Angier's Emulsion. Its use is especially indicated in intestinal disorders either as a specific agent or as a vehicle for intestinal antiseptics or astringents.

Such an emulsion is almost indispensable in a physician's practice.

Samples and literature will be prepaid to any physician sending the company a request for the same.

THE NATIONAL PATHOLOGICAL LABORATORIES

The range of work done by this laboratory is merely suggested in its announcement made in our advertising columns, and, though brief, they suggest that the man who does not maintain his own laboratory will find their announcements interesting, while suggesting that a fuller acquaintance with their work is worth while.

The modern commercial laboratory is a great institution, and is exceedingly helpful, indeed, wholly indispensable. Its work puts the physician in the smallest country town on an absolute par with the man in the city as regards this diagnostic aid, as well as in the matter of all vaccines.

We cannot too strongly urge every medical man to become acquainted with such a laboratory.

For further information address the National Laboratories, 5 South Wabash Ave., Chicago.

THE HARVARD X-RAY LABORATORY

The greatest demand upon the medical profession and by the profession upon its units today is for better diagnosis, which arises from the higher education of medical men and the better apparatus with which to work. At the head of all diagnostic appliances helpful to the profession is the *x*-ray apparatus. Where this apparatus is not at hand, the practitioner can turn to the commercial laboratory conducted by experts.

One of the leading laboratories of this character is the Harvard X-Ray Laboratory, of Minneapolis, which specializes in sinus and dental work, diagnosing the dangerous infections seated in the nose and throat.

This institution is located in the Syndicate Block in Minneapolis, and makes nothing but "films that are diagnostic."

A GREAT HOUSE

The house of Johnson & Johnson, of New Brunswick, N. J., is one of half dozen establishments in this country whose name upon an article stamps it as "sterling," in fact, as near perfection as human skill can make it; and, moreover, the name is to be found upon a very large line of products used by the medical and surgical profession. If it is absorbent cotton, catgut, or what not, this name assures that it is wholly dependable. Higher praise than this is not obtainable, and the existence of such skill and integrity in a "caterer" to the medical profession is a genuine cause of gladness, for it protects the reputation of the medical man or surgeon and safeguards the public.

THE BOOK AGENT

Yes, he is often unwelcome, and is always so when he carries an inferior book and shoots it at a physician with a bombastic story learned by rote. But when he comes in with a real book and with a comprehensive knowledge of medical authors and their works, it is—"Come in, Mr. Kimball, and tell me what is new, and if you have anything that I need I shall be pleased to have a copy." Of course, it may not be Mr. Kimball knocking at the door, but that is the generic name of the tribe, as well as the specific name of the genial Edward J. Kimball, who sells medical men the books they want and need and will enjoy. He has offices at 827 Nicollet Ave., Minneapolis.

Why not be the right kind of a book agent and always get a hearty welcome?

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Lavoris is without doubt a best seller; but it was not made so by a large amount of advertising or by a small amount of effective advertising. In fact it has been comparatively little advertising—broadside have been unknown in its promotion. It gained its "notoriety" by its excellence, which is readily ascertained at its first use. Its base is chloride of zinc, which is known to every medical man to have distinctive and great healing qualities, without an equal in the treatment of mucous membranes.

Lavoris is, so to speak, an elegant form of a chloride of zinc preparation, and its merit, combined with its elegance, has made it *the* best seller of yesterday and today.

THE PHYSICIANS' EXCHANGE

The physicians of the Twin Cities, as well as many physicians in the country, have found this Exchange of very great service. Its helpfulness is at times so great, both to physicians and their patients, that one wonders how the profession could dispense with it, and yet it has never been adequately patronized, and has always had a struggle to maintain its existence.

The service has been so varied and so helpful that our leading physicians, at least those in St. Paul and Minneapolis, should extend it their patronage, even though it may take them one or two months, possibly longer, to ascertain how helpful it is, and how profitable.

Call up the Exchange and ask for an explanation.

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Fully equipped with X-ray and clinical laboratories we offer the profession accurate reports plus a medical interpretation of the findings.

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where all the usual tests receive attention equal to that given the unusual, such as BASAL METABOLISM, BLOOD CHEMISTRY, and RADIOGRAPHY, which are featured.

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The constant daily use of a Reliable Disinfectant will prevent the spread of disease germs, and leave a clean, healthy atmosphere.

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ANTISEPTIC DRESSING LIQUID-OINTMENT-POWDER

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*Response of Certain Skin Inflammations
To Applications of*

CAMPHO-PHENIQUE

Points clearly to the market value of this agent in dermatoses.

CAMPHO-PHENIQUE has decided germicidal properties and is also an antipruritic of more than usual power.

In chronic eczemas, attended by irritations, CAMPHO-PHENIQUE applied several times daily will give gratifying relief and help in restoring the skin to a normal state.

Samples and Literature on request.

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THE JOURNAL-LANCET

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No. 19

INTRAVENOUS MEDICATION, WITH SPECIAL REFERENCE TO IODOFORM AND SODIUM IODIDE IN THE TREAT- MENT OF ACUTE AND CHRONIC RESPIRATORY DISEASES*

BY H. G. HARRIS, M. D.
WILMOT, SOUTH DAKOTA

During the past eight or ten years a considerable amount of work has been done along the lines of intravenous medication, but the workers have been relatively few. It is astonishing how many physicians one meets today who are wary of the method, or in doubt as to the efficacy of the treatment. As Dr. Jacobi once said, "Only those of us who do not know what medicines can do deny their efficacy."

So it is with intravenous medication; only those who have not thoroughly tried it doubt its efficacy. It is pretty generally conceded by the profession that the intravenous method is the most scientific means of administration. Louis Sterns, in the *Medical Record* for July 5, 1919, said, "It offers as near the ideal method as we can hope to secure."

The history of intravenous medication dates back several hundred years. According to David I. Macht, it can be divided into three periods:

First, the Egyptians are said to have transfused blood as early as 1492. Sir Christopher Wren, although not a physician, must be given the credit of first injecting drugs into the bloodstream. Opium was used on dogs, which was said to stupefy, but did not kill. Without going into detail it may be remembered that such drugs as aqua plantagenis, scammonium, and resin of jalap were injected for the cure of syphilis.

The second period began about the end of the eighteenth century and continued until the middle of the nineteenth century. This period contained the names of some famous men: Fontana, Magendie, Bichat, Nysten, Orfila, Dieffenbach, and others; and, as might be expected from men of this type, the experimental stage began to develop in this period. Cures were attempted on hydrophobia and tetanus. Baron Percy, in 1814, treated two series of tetanus with opium and stramonium. In the first series, three of the five lived; in the second, five of the eight. The most daring experiment of this period was perhaps that of the Boston physician, Dr. E. Hale, who injected himself with one-half ounce of castor oil and lived to tell his experience.

The third period shows the bacteriologic and chemical knowledge of the times and had, in general the same views as we have today,—the increasing of the patient's resistance or the destruction of the infection itself. Quinine was used for malaria by Bacelli, in 1890; sodium cinamate and balsam of Peru for tuberculosis by Landerer, in 1892; sodium cacodylate for pernicious anemia by Gautier, in 1897; and Credé, in 1901, was using silver salts for all kinds of infections. The number of drugs now in use is larger. Some are of undoubted value, others are useless or harmful. But such is true of all pioneer work, and, as Macht says, "It has paved the way for our present rational intravenous ther-

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apy, based on careful pathologic, pharmacologic, and chemical research."

During the past five years we have devoted special attention to intravenous therapy. We have used sodium iodide, sodium salicylate, sodium cacodylate, iron, iron and arsenic combined, mercury bichloride, and iodoform. The first products used were made by the Denver Intravenous Products Company and later those put out by George A. Breon Co., of Kansas City. Recently we have been preparing our own solutions.

It has long been known that iodine in some form or other occupies a prominent place in the treatment of the respiratory diseases. In 1909 Dr. Bain reported excellent results in the treatment of pulmonary tuberculosis with iodoform, according to the method of Dr. Dewar, who had been using it since 1903.

After reading their papers I decided to try it on a case of tuberculosis under my care at the time. Since then we have given several hundred treatments. We have used it in many respiratory diseases, even lobar pneumonia, and while in certain conditions (especially pneumonia) it should be given with the greatest caution, in certain other infections (notably pertussis) it is almost a specific.

CASE REPORTS

CASE 1.—The patient was a woman aged 34, who had been ailing for the past nine months. She had a harassing cough, temperature, 103° to 104° F.; pulse, 120; and had lost some weight. Both upper lobes were involved; impaired resonance and moist râles over the right apex. The sputum showed numerous tubercle bacilli. She had been doing her own house-work under sanitary conditions that were anything but normal.

Iodoform in ether and albolene, 0.5 gr. doses every second day, was begun, and in less than one week the cough was less troublesome and the expectoration was less and thinner, and within three months the temperature and pulse had returned to normal. The lung findings were almost too good to be true: instead of the moist bubbling râles, the lesions appeared to be drying up and harsh respiratory sounds could be heard on both inspiration and expiration.

The treatments were continued for about two months longer. She gained in weight and strength and was apparently out of danger, when, eleven months later, the house in which she lived was replastered, and she slept in the building while the work was being done. Three months following this incident she returned with the original symptoms exaggerated, and on examination the lung condition was found to be far worse than when she first appeared for an examination. Treatments were resumed, but they were given at irregular intervals and seemed to have little or no effect. She died within the year.

CASE 2.—Miss J., school-girl, aged 17, had been ailing

for nine weeks, with loss of appetite and weight and a constant productive cough. When we saw her all the classical findings were present: impaired resonance and mucous clicks in both apices, even the fluoroscope showing the left lung to be cloudy; pulse, 120; temperature, 102°; sputum showed numerous tubercle bacilli. Patient was put to bed and given iodoform every second day and iron every third day. In less than one week the temperature was ranging from normal to 99° F. and the pulse 80 to 84, and in three weeks she had gained three pounds. We could not keep her, however, and on the advice of another physician she began taking exercise and morning rides. She failed rapidly, and died within the year.

CASES 3 and 4.—The patients were Indians, brother and sister. Both presented similar findings. The brother was twenty-four years of age and had had pneumonia eleven years before. The present trouble began with general weakness, night sweats, hemoptysis, and loss of weight and appetite. The upper lobe of the right lung, upon examination, presented fine crackling râles, and the sputum showed tubercle bacilli. He was given iodoform injections every second day and told that he would have to keep up the treatments for at least three months. During the first month he was comparatively quiet, but not in bed; after that he kept up the regular work around the farm. The sister, whose symptoms and findings were the same as those of the brother, received the same number of treatments. There has been no return of symptoms in either case in eighteen months.

CASE 5.—Mrs. R., aged 30, with a tubercular family history, had been ailing for three months. She had a productive cough of three months' standing. Her appetite was poor, and she had lost six pounds. Both apices showed impaired resonance and fine râles, but tubercle bacilli were not found in the sputum. Under the iodoform treatment the findings cleared up in about four months, and there has been no return of symptoms for more than three years. A recent communication from this patient states that she has been doing general house-work the past year, and that she and a sister picked thirty-five hundred pounds of cotton this fall besides helping nurse her family through a siege of influenza.

CASE 6.—Mr. E., aged 58 years, had pneumonia one year before and had not been well since. Pulse, 88 to 96; temperature, 100° to 101° F.; pain in the left chest; a productive cough; and the sputum filled with tubercle bacilli. Lower lobe of left lung, flat; harsh tubular breathing; moist râles and mucous clicks throughout. This man was put to bed, and iodoform given every second day until the temperature and pulse were normal; then the treatments were given every three to four days. He left three months later with a gain of eight pounds. The left lower lobe was still flat, but the moist râles had disappeared. He received forty-eight injections. More than three years have passed, and there has been no return of symptoms.

About four years ago we began using sodium iodide in chronic bronchial conditions. The fact that the drug can be used in such large doses in perfect safety enables one to adapt the dosage to any degree of tolerance encountered. Because of this and the fact that it is eliminated quickly, one

is enabled to give doses large enough to obtain the desired therapeutic effect.

CASE REPORTS

CASE 1.—Mr. V., aged 58, had had a troublesome cough for several years. Examination showed numerous sibilant râles in both lungs; cough would bring a fairly large amount of a thick mucoid material, when there was a cold it would be mucopurulent. Diagnosis: chronic bronchitis.

Sodium iodide was given every fifth day from April 23 to June 16. The lungs were then practically clear. He went through harvest time stating that the hot weather did not affect him for the first time in ten years. It has now been more than three years, and there has been no return of the bronchial trouble.

CASE 2.—Ralph A., aged 15, had been sick one week when he came into the office. He had a constant productive cough, and was expectorating mucopurulent material. Temperature, 102° ; respiration, 22; sputum showed numerous diplococci pneumoniae, micrococci catarrhalis, and staphylococci; the urine showed a few casts and a slight trace of albumin. Diagnosis: acute diffuse bronchitis, probably influenza.

The patient was put to bed and given sodium iodide every five days until the temperature was normal. He was given five treatments in all, and the lungs were clear at the end of three weeks.

CASE 3.—Mrs. A., aged 49, had been sick in bed one day when first seen. Present trouble began about one week before with raw throat and palate. This condition had disappeared about three days when she began to have chilly feelings, headache, and pain in the back and limbs. Cough was dry and harsh; after a severe spell of coughing she would raise a thin frothy material, but no blood. Examination of the chest elicited dry sibilant râles over the greater part of both lungs; there was no consolidation. Diagnosis: influenza bronchitis.

In this family there were seven cases of influenza in bed; two were frank pneumonias. This woman received sodium iodide every day for three injections, then every second day for two doses. At the end of this time the cough had disappeared, and the lungs were clear.

CASE 4.—Mrs. H., aged 31, had been sick one week when first seen, had hot and cold flashes but no distinct chill; pains in the back and limbs and a splitting headache. Cough was constant and of a dry and non-productive type; pulse, 90; temperature, 102° . Examination elicited a general bronchitis. The râles were a dry sibilant type; no consolidation. Diagnosis: influenza bronchitis.

This patient received sodium iodide daily for three injections then every second day for two more. At the end of ten days the cough had ceased, and the lungs were clear.

The remarkable results obtained by the use of sodium iodide intravenously in the chronic bronchial conditions offered so much hope that it was decided to try the drug in the more acute bronchial infections. Two years ago we began using sodium iodide in every case of influenza, and the results were so far beyond those obtained by any treatment we had ever used that it was

decided to try it as a prophylaxis for this disease. Early in October, 1918, we began our prophylactic administrations.

Ampules of 20 mils containing 25 gr. of sodium iodide were injected at intervals of three to five days. The number of patients receiving this treatment was 107. Their ages ranged from six years to adult. Of this number three contracted influenza (two of the three were women, both had hyperplastic goiter, and one was three months pregnant); the third case was doubtful. The latter was seen by an assistant three and one-half months after receiving the sodium iodide.

Out of 236 cases of influenza treated there were 14 cases of pneumonia. These cases, however, were all frank pneumonias at the time they were first seen. One had received her second sodium iodide as a prophylaxis three days before her infection. All of these cases received from two to four injections of sodium iodide at intervals of twenty-four hours. The pneumonia cases, however, received the drug diluted with four to eight ounces of normal saline. From previous experience we have noted that when sodium iodide is given in a concentrated solution the reaction may be severe, resulting in a chill. Of the 14 pneumonias, there were two deaths. One case was taken sick at the automobile show, was in bed in Minneapolis one day, then came home, and was up for two days before coming into the office. The second was seen forty-eight hours after taking ill, but both infections were of the hemolytic type, and died within a few days.

In January of this year we began giving sodium iodide, as a prophylaxis for influenza. The number of patients receiving prophylaxis was 159; the number of intravenous treatments given was 359; the intervals ranging from twenty-four to seventy-two hours. Where there was influenza in the house we gave the prophylaxis at twenty-four hour intervals. Of the 159 cases receiving prophylaxis, 3 developed influenza. There were 188 cases of influenza treated; of this number 29 had pneumonia; none of these, however, received prophylaxis. The majority of the pneumonias were of the peculiar influenza type; usually a left lower involvement, often central at the beginning. Every case received our preparation of sodium iodide undiluted, and given quite warm, somewhat above body temperature. There is less danger of a chill following the giving of sodium iodide in the bronchial pneumonia than in the frank lobar type. The solution should always be given warm.

Our first work was done with sodium iodide in sterile water, preferably distilled; after boiling, the water was allowed to cool. During the past epidemic we prepared our solution by adding guaiacol or creosote, or both, with sodium phosphate to alkalinize. Glycerine was added in small amounts to hold a better solution.

The preparation we are using at the present time contains—

Sod. iod. gr. xxiv.....	1.40
Creosote, m 1/5.....	0.024
Guaiacol, m 2/5.....	0.036
Sod. phosph., gr. x.....	0.6
Glycerine, m ii.....	0.12

There is no unpleasantness following the administration of this solution other than the brassy or, as some describe it, the smoked-meat taste in the mouth and throat, which appears in a few hours and may last twenty-four hours or more. The solution of iodoform was prepared according to Dr. Dewar's formula as follows:

Liquid paraffine.....	40 per cent
Anesthetic ether	60 per cent

In every twenty drops, dissolve 1 gr. of iodoform. Thus the amount of iodoform given was on an average of .5 gr. every second day.

The technic is simple, any one familiar with entering a vein may give it, and any vein may be used. We frequently give it in the back of the hand or wrist, and have given it in the back of the foot.

In considering the question as to how iodoform acts, Crofton says, "The injections produce a leucocytosis, and the fact that sometimes the symptoms of iodism develop indicates that the iodoform is split up when it comes in contact with pus and so the decomposition of the iodoform may take place at the site of the lesion."

Dewar suggests several explanations. Two of the most probable are, first, that the iodoform has a direct germicidal action; secondly, on the splitting, oxidation of the methyl group produces formaldehyde, the iodine being liberated, and both act directly as germicides. Crofton thinks that one of the chief actions is the well-known action of iodine converting toxine into toxoid, which is not poisonous, but is quite as good as, if not better than, toxine as a stimulant for the production of antitoxin. The power that iodoform has of abolishing a reaction after a dose of tuberculin points to this explanation. That leucocytes under normal conditions do absorb iodine has been demonstrated. To quote

Sajous: "Iodine and its preparations, in whatever way administered, are taken up by the leucocytes, and it is through the intermediary of these cells that they, or rather the substance into which the leucocytes convert them, penetrate into the circulation." According to this author the main therapeutic action of the iodine and its preparations is due to the direct action of the iodine compound secreted by the leucocytes.

Various experimenters have demonstrated that the iodides, in their proper dosage, will produce a transitory leucocytosis. It has further been proven that the leucocytes take up iodine from the blood and intestinal canal, and deposit it, or the substance into which it is converted, in the tissues.

In our own experimental work with sodium iodide and iodoform, we found an increase in the leucocytes, varying from 20 per cent to 55 per cent of the original count, the increase being established in about six hours and continuing for eighteen to twenty-four hours.

Sajous says, "Even parasites may be destroyed by the digestive activity which the blood acquires through iodine and its salts."

Stockman and Charteris in a large number of experiments proved that iodine and its preparations do not influence the blood-pressure or the pulse. They gave from 15 gr. to 180 gr.; one case received 300 gr. daily. To quote these experimenters: "In no case did any fall in the pressure occur, or any change in the rhythm of the heart."

Admitting the foregoing interpretation of the physiological effects of the iodides, it is logical that they should fill an important rôle in the therapy of those infections which, save in an uncomplicated form, do not produce a leucocytosis. In those infections where an increase in the leucocytes is found, their relative number is of prognostic value. Jordan says, "The phagocytic power of leucocytes has been found to be greater than normal for certain bacteria in pneumonia, scarlet fever, and other conditions in which there is acute leucocytosis, and the outlook is favorable. The increase in the activity in such cases may be due to the predominance of young leucocytes."

In tuberculous and influenza infections (in the uncomplicated form) a leucocytosis is not found; therefore a measure that will stimulate a production of white-blood cells above the normal and at the same time have no deleterious effect on the organism will be rational therapy.

To quote Sajous further: "In syphilis, scrofula, and tuberculosis the power of the iodides to promote phagocytosis also comes into play, the bacteria, their toxins, or endotoxins, being combated by the same constituent antitoxic and bacteriolytic. In chronic bronchitis, pleurisy, and endocarditis, the curative action of these valuable agents differs in no way from the above; by increasing the activity of metabolism, they promote nutrition and process of repair, while simultaneously insuring the destruction of the detritus and of any pathogenic germ that may be present, all this, while protecting the body against renewed infection."

CONCLUSIONS

1. Iodoform offers a rational and safe treatment in pulmonary tuberculosis and certain acute (pertussis) and chronic infections of the respiratory tract.

2. The iodides, either directly or through substances secreted by the iodine-laden leucocytes, seem to have a specific value as an immunizing agent against the acute respiratory diseases, especially influenza.

3. Sodium iodide, because of its low toxicity, is the safest preparation to use.

DISCUSSION

DR. T. J. BILLION (Sioux Falls): I have had no personal experiences with the particular medicament the doctor has used and the purposes for which he has used it; therefore what I may say in regard to intravenous medication will be in a general way.

The advantages of intravenous medication are that drugs may be introduced into the system without causing injury. These drugs may be introduced into the system through a vein, whereas, if they were used subcutaneously, it might cause the patients pain. I have reference now to such drugs as neosalvarsan and salvarsan. These things can be avoided by intravenous medication. Another thing is that the action is rapid. That is a second advantage. You get quick action, and you get away from too much absorption in the intestinal tract. Of course, there is more or less absorption of the drug into the system, and there is also some doubt about medicine given intramuscularly or subcutaneously. A third advantage of intravenous medication is that the drug or drugs can be given in larger amounts without any irritation to the patient. There is a doubt in my mind whether there is any great advantage in intravenous medication over subcutaneous or intramuscular medication, because in subcutaneous or intramuscular medication the products are absorbed with almost as much certainty as they are by intravenous medication.

There are some dangers connected with intravenous medication. There is the danger of giving things with which we are not familiar. When medicines are administered so easily we are liable to become careless and give something that experience has shown not

to be safe. Endocarditis and phlebitis have been caused from intravenous medication either by way of infection or by giving medicine which may have some irritating action upon the tissues.

I was glad to see the doctor has not become too enthusiastic about the treatment for tuberculosis by intravenous medication because that procedure should be followed out carefully. I think the doctor is to be congratulated on his good judgment in doing that.

DR. B. A. BOBB (Mitchell): I heard only the latter part of the paper of Dr Harris, and what I did hear of it appealed to me as being very good.

I want to caution you against resorting to intravenous medication in every case. Sometimes it is almost impossible to find the vein in patients with fat arms after opening down to it, hence great care is necessary. I have given three or four thousand intravenous injections of neosalvarsan, and we have found lots of cases in which the vein was found easily, but sometimes you cannot find it so readily.

DR. D. W. CRAIG (Sioux Falls): This is a very broad subject. I believe the future contains a great many possibilities and surprises for us in the way of intravenous medication as regards the medicaments we use and a possible improvement along the line of technic.

For eight or nine years I have been using intravenous medication with various medicaments for various purposes. I find that the usefulness of it has been increasing. I have been surprised to find what may be accomplished by this method of treatment, and I believe if we all acquaint ourselves with the technic so as to give it without much trouble by the simple plan of cutting down onto the vein, we shall do our work more efficiently. It is only in rare instances where we fail to find the vein. The trouble is we do not acquaint ourselves with it sufficiently to make easy use of it.

I was glad to hear the doctor speak of sodium iodide. I have not used it, but I am much interested to try it. The preparations I have used have been the phylacogens, a number of the pneumonia phylacogens, and rheumatism phylacogens, with large dilutions, six to eight ounces, of either normal salt solution or some form of spring water. With tepid warm water I get no reactions whatever unless it is given too cold. The solution should have a temperature of 44° C. anyway. If the temperature is below that point the patient is liable to get a chill.

The ailments for which it can be used I think are almost numberless because in any disease it is carried through the blood-stream, and we get at the disease by using direct medication. I believe that as time goes on we will have more and more remedies which can be administered in this way to advantage.

The local irritation is due to subcutaneous administration, and, I think, that method of administration is far more dangerous than the intravenous. Of course, we would not undertake to give any remedy by mouth unless we were acquainted with the result which we expected to get, and we should not give anything intravenously unless we feel sure of what we are doing. We should not experiment on patients, but our experimental work should be conducted in laboratories, and those who are acquainted with chemical remedies should be able to determine what remedies to use and in what strength they should be administered. It is our duty to keep abreast of this form of medication and do better than we would otherwise.

I agree with the doctor's statement as to the results which he has obtained in the treatment of pneumonia. I have used intravenous medication in cases of typhoid fever and of rheumatism, and probably a dozen other diseases, and the results have always been eminently satisfactory, with the exception of a small percentage of cases in which we always expect negative results, but certainly intravenous medication has been very satisfactory in my hands.

DR. RICHARD G. EATON (Ethan): I think intravenous medication is very important, especially in emergency cases, such as exhaustive hemorrhages after childbirth. Of course, if these patients vomit and are vomiting, the medicine cannot be given very well by the mouth, for they cannot keep it down. In that event it is almost necessary to give intravenous medication to save the patient's life. Salt solution is most generally used. When I was in school some years ago I was doing some work with terebene, and we used Ringer's solution, which contains a little calcium. It is supposed to be the chemical which makes the salt bead. That would be a good thing for us to use with the salt solution, use a very small amount of calcium. In the serum, where it is precipitated with potassium oxalate, should the heart stop beating you add an amount of calcium carbonate, and then the heart will start beating again as it was beating normally. That is a good thing to use in connection with intravenous medication. I know sometimes physicians want to use peptones, but they cannot inject them into the blood safely, for they may act as a poison. Where the medicine is absorbed through the stomach it is natural. One needs to be very careful about trying these new medicaments and drugs, as some of them may act as poisons when given intravenously.

DR. J. C. OHLMACHER (Vermilion): I would like to ask Dr. Harris in using liquid intravenously, which is so insoluble, may it not produce embolism?

DR. E. O. GIÈRE (Watertown): The essayist lays great stress on the use of sodium iodide in the treatment of tuberculosis, and, as I understood him, he uses it in both acute and chronic conditions. We used to be warned about using iodides in acute tuberculosis on the ground that they would cause a sudden breaking down of the degenerative processes and hurry the downward course of the disease.

I remember some years ago I had a case of acute tuberculosis. I put the patient on large doses of iodide of potassium, and in a few days she had a terrible hemorrhage, and she pursued a downward course in a hurry, and it was not very many weeks until she was dead. Since that time I have been cautious in giving iodide of potassium in acute tuberculosis, and I would like to ask Dr. Harris his opinion in regard to that.

DR. HARRIS (closing): Dr. Eaton, I believe, brought out the point that we should be careful about using some of the poisonous products intravenously, and I will say in reply to that—this might be true of any drug. I think the toxicity of the various iodides has been very well known for many years, and I believe it has been further shown that sodium iodide is less toxic.

One of the best known physicians in my section of the country fourteen years ago used sodium iodide in practically all of his syphilitic cases. He was a doctor of the old school, but, just the same, he cured as many cases as some of the rest of us did, and it may be more.

Speaking of phlebitis and embolism: I believe Dr. Ohlmacher referred to them, as also did Dr. Billion. I mentioned one case in which we made a tentative diagnosis of tuberculosis (Case 5). The patient gave a tubercular family history. She received 76 injections. We got phlebitis in her arm and were compelled, on various occasions, to wait for a few days before giving another injection.

We have given many thousands of injections intravenously, including salvarsan. I do not know what drugs caused endocarditis and the extensive phlebitis spoken of. I have used quite a number of drugs intravenously, such as mercury, arsenic in the form of the cacodylate, and the preparations of iron that the various houses put out. We have had nothing but favorable results from the use of these drugs given intravenously.

In referring to the statement made by Dr. Billion, that absorption is just as fast intramuscularly as it is intravenously, or the drug or drugs are about as efficacious when given in that manner, I would like him to give sodium iodide intramuscularly or sodium salicylate, because it is almost intolerable; nobody can stand it. It is just as bad as giving salvarsan, for the reason that if you get a drop of the drug outside, you will have to hold the patient the next time.

During the past two epidemics of influenza we gave many administrations to children from two to six years of age; if you can get by without hurting them the first time, you will gain their confidence. If it is adults you have to deal with, and you hurt them in its administration it is bad enough.

We often use the blood-pressure band around the arm in order to bring out the vein. We do not see one-fourth of the veins we inject, but, after giving many of these injections, you can palpate the vein. The veins are not always where you think they ought to be.

Dr. Craig spoke of improving the technic. For the last five years our nurse has given most of the injections in the office. If the technic is mastered there will not be many failures in giving any of these injections.

Dr. Craig spoke of giving the solutions warm. Thousands of injections have been given intravenously for years in emergency cases, and there is no question in my mind but what all the solutions should be given warm and above the temperature of the body. We do not hesitate to give them so. We do not take the temperature of them, but the ampules are placed in a glass of hot water and warmed. There may be a red spot like a pin-prick where the needle was inserted for a day or two afterward from the heat of the needle, but you will not get a phlebitis on that account.

Some one has criticized the treatment of Dr. Dewar, who has given many thousand treatments in cases of tuberculosis. A number of years ago this form of treatment was instituted in order to keep these patients on their feet, without putting them to bed, and the author reports cases in which this was done. In one of the last reports I saw of his, he and Dr. Bane were especially enthusiastic, and he said it was superior to any method of which he had any knowledge.

A sanitarium is out of the question for most of these people, because, in the first place, they cannot afford it.

Dr. Giere, I think, misunderstood me. I did not mention giving sodium iodide in the acute form of tuberculosis. It was iodoform in the acute and chronic forms; but we have given calcium iodide in acute tu-

berculosis, and it does not produce any deleterious effect. There are no severe coughing spells from the use of calcium, such as there are from the use of iodoform, where these patients will cough hard in the early stage and cough up a small amount of mucopurulent material, but calcium iodide will make them easier and at the same time lessen the severity of the coughing. Iodoform in whooping cough, in so far as the adult is concerned, is as near a specific I think as one will find in anything.

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SOME LABORATORY METHODS FOR THE COUNTRY PRACTITIONER*

BY BLAKE LANCASTER, M. D.

WAHPETON, NORTH DAKOTA

The object of this paper is to refresh your memories on points that are quite familiar, but, having fallen into disuse, are undergoing a sort of atrophy. I have nothing to say that will interest the man who is doing advanced work, but I hope he will be liberal in his criticism and discussion, and add much to the value of the subject by presenting his views at length for the benefit of the regular everyday practitioner who is overlooking valuable aids to his diagnostic methods, because he thinks they are tedious or beyond him. Moreover the psychology of the laboratory and x-ray findings are admirably designed for the prosperity of the physician. A patient who is convinced that his case is wisely studied and is of sufficient importance to interest the physician in whose hands he has placed his life, is usually a satisfied patient. I think, too, that most of our failures to make a proper diagnosis come, not because we do not know, but because we get a little indifferent and, perhaps, a little lazy.

I dare say that every physician who has filled a country location for a few years has determined that he would brace up and keep case-records. There are history-blanks and stamps without end, and you have all probably tried some form that you thought just suited to your work, but later gave it up because it seemed cumbersome and awkward. The patient's name, address, and age can be written on a plain card 4x6, as fast as you can ask them. The date and prominent symptoms

and findings can be jotted down while you make the examination, and a few words will describe your treatment. It helps a lot, when a patient comes in and tells you he is no better after a month's treatment, if you can just look at a card and find that the headache, constipation, and gastric distress that he complained of have all disappeared, and his only complaint is, that he cannot get enough to eat. I like to listen to the patient's story and make note of his various complaints, then systematically go over the different symptoms, because the whole trouble is not always just where the patient says it is. If the patient has a hoarse throat, unless you examine the urine you may overlook the real lesion, viz., a nephritis. Diarrhea is only a symptom, the same as dyspepsia, not a disease, and cannot be treated as such. Most frequently, perhaps, it is due to the ingestion of a lot of irritating stuff; so is appendicitis; and diarrhea, although constipation is the rule, occasionally accompanies this disease. A leucocyte count will tell whether appendicitis is present or not, and a urinalysis will determine whether it may be due to kidney disease.

Quite a complete urinalysis can be made in from three to five minutes and after a few months' practice that time can be cut in two.

The first thing to do is to *get the specimen*, and that is usually the hardest part of the examination. Macroscopic examination will show almost instantly by its smoky appearance if blood is present; by a thick turbid precipitate, if pus is

*Presented at the thirty-third annual meeting of the North Dakota State Medical Association, at Minot, June 15 and 16, 1920.

present; and by a yellow foam, upon shaking, if bile is present.

If the sp. gr. is over 1.025 you should test for sugar, preferably by Benedict's solution, which keeps indefinitely, and is much more sensitive than Fehling's or Haines' solution.

Concentrated urine, when one perspires freely in the summer time, is also of high specific gravity.

A fixed low specific gravity indicates poorly functioning kidneys, repeated examinations showing about the same specific gravity day after day. But if, on withholding liquids, the kidneys show the power to concentrate and the specific gravity rises it may be taken as an indication that they are functioning properly.

Nitric acid will clear up the question of nephritis, which may manifest itself clinically in the shape of persistent headache, diarrhea, hoarse throat, nose bleed, and will clear away many hazy ideas as to whether a patient is suffering from quinsy, bad eyes, bad nose conditions, etc.

You may be in doubt as to whether frequent burning micturition is the result of kidney or bladder trouble. If pus is found in the urine by Donn  s test, which is positive when there is a thick gelatinous mass on mixing equal parts of urine and liq. potass  , nine times out of ten you are dealing with a cystitis. If you are wrong only once in ten times, that is better than the best guess you can make by clinical symptoms alone.

Obscure symptoms resembling tuberculosis, with rapid loss of weight, such as you see in cancer, can easily enough be caused by diabetes. The test for sugar can be applied in a minute, and one of the causes of such a train of symptoms be definitely settled in the case at once. Moreover, if sugar is found to be present and a drop of chloride of iron in the urine produces a port wine color, diacetic acid is present, and the patient is in a dangerous condition.

Acetone in the urine is significant if present in large amounts. It is present in severe cases of the pernicious vomiting of pregnancy and eclampsia, and may indicate that the fetus is dead. Acetonuria is practically always present in acid-intoxication, and is of significance in post-anesthetic toxemia, particularly if chloroform has been used. Its amount is a better indication of the severity of diabetes than is the amount of sugar. A progressive increase is a grave prognostic sign. The test for acetone is as follows: glacial acetic acid 0.5 c.c. is added to 15 c.c. urine.

A few drops of fresh nitroprusside of soda are added. Ammonia is run over the surface, and, if acetone is present, an intense violet ring appears.

I have many times wished I could know what that dull heavy ache is in the pit of the stomach. The patient is not complaining much, but does not feel like being up, and food lies in the stomach like a rock. Many times I have seen a green ring appear when I was testing for albumin. I had missed a jaundiced appearance by lamplight, but the presence of bile in the urine directed me to the liver as the seat of the trouble.

Recently functional tests for the efficiency of the kidneys have come into use. The test offered by Rowntree and Geraghty in 1910 is simple and very instructive. It is as follows:

1. Give the patient two glasses of water to drink.
2. Twenty minutes later have him empty his bladder and inject 1 c.c. phenolsulphonephthalein.
3. At the end of one hour the patient should empty his bladder, and save the urine.
4. At the end of the second hour he should again empty his bladder.
5. Add sufficient NaOH to the urine to bring the red color to its maximum intensity.
6. Dilute each specimen to 1,000 c.c. and estimate by colorimeter the amount excreted. When below normal, 30 per cent to 50 per cent indicates that the deficiency is of cardiac origin. Below 30 per cent is considered certainly renal.

Nearly every doctor has a microscope. He was taught to use it in school, but the significance of his findings was probably not impressed upon him. He knows that urine sometimes contains casts and blood cells and various crystalline salts, and he would know them, too, if he saw them, but what they suggest clinically does not seem to be of much consequence as compared with the bedside deductions. It may be because he does not put his knowledge into practical use often enough to be sure of it. It may be it was not as easy to find the structures when the professor was not at hand to regulate the light and focus the instrument, a little bit of technic that is just the result of practice. A light that is strong is not suitable for seeing the pale outline of casts and white blood cells. Subdue the light with the diaphragm to almost its smallest point. Run the low-power objective down till it is close to the slide, then, while looking through the eyepiece, gradually withdraw the tube with the coarse adjustment till objects are visible. The

fine adjustment will bring them into clearer view, and the light can then be regulated to its most suitable strength. If you have ever attempted to use a kodak you know the great number of failures you had before you got so you were at all sure you could make a good picture. Exercise the same patience towards your microscope, and you will be wonderfully rewarded. The presence of blood cells in the urine is always pathological, and is significant of acute nephritis or an acute exacerbation of chronic nephritis. Blood cells are present also if calculi, tubercle bacilli, or new growths are present somewhere in the urinary tract. From the appearance of pus cells one cannot say from what part they come. A few in the urine do not mean much, but many are of serious import. Casts of course are an indication that the kidneys are in a pathological state. Hyaline casts are not very significant. Fatty casts indicate a serious parenchymatous nephritis, and waxy casts found in advanced cases of nephritis are of serious moment.

The examination of the blood requires a little finer grade of technic than is required in making urinalysis, but the findings are extremely valuable. It is not so very long ago that a friend visited me on the way to Rochester for an operation for gall-bladder trouble. She was very weak, as yellow as saffron, and had a slight rise in temperature. Her hemoglobin was 40 per cent; her reds under 2,000,000; and it was evident she was suffering from pernicious anemia. The hemoglobin percentage is easily estimated in a rough way by Talquist's blotting-paper method. Sahli's method of changing the hemoglobin into acid hematin and comparing it with a standard color, is probably the most accurate ready test, but the thing of importance is to adopt *some* test, become familiar with it, and stick to it. Low hemoglobin is common to all types of anemia. It is very characteristic of chlorosis, accompanies pernicious anemia, and is found in the poorly nourished and chronic acute infectious diseases, certain poisonings, and acute and chronic hemorrhages.

An enumeration of the red cells will be of paramount importance in the diagnosis of pernicious anemia.

More information is gained perhaps from a white count than from any other blood examination within the reach of the country doctor. There is an increase in most of the acute infections; and, aside from the leukemias and a few other conditions, one may depend on a count of 14,000

or more as being the result of an acute infection. A severe backache with a leucytosis of 30,000 is not lumbago. It is almost surely pneumonia. Everyone is familiar with all sorts of bellyaches, many cases of which improve and get better without any treatment; and everyone, too, knows any number of cases that do not quite get better and reach the hospital in a moribund condition, when a white count would show, in plenty of time, that the real situation is one of acute appendicitis. This is not a worn-out song by a long way. Appendicitis is a real and grave condition, and many cases are being neglected that might be diagnosed in time to save lives that are lost. Clinical symptoms may be so masked that it is quite impossible to make a correct diagnosis, but almost surely the laboratory findings will clear the case up. The technic is not difficult, but it is precise. The blood must be drawn to the required mark exactly, preferably the 0.5 mark on the white pipet, and diluted with 1 per cent glacial acetic acid in water to the 1.1 mark above the bulb, rotating the pipet as the fluid is drawn in. Shake vigorously to mix with the bead in the bulb, expel a few drops, and choose one of suitable size to put on the ruled slide, so that, when the coverslip is applied, the diluted blood will nicely cover the disc in the counting chamber. By using a half-inch eye-piece and a two-thirds objective, with the light properly subdued, it is easy to make a count. If it takes you a month to get onto the technic, you are wonderfully well repaid for the trouble it has taken. I heartily recommend Todd's Clinical Diagnosis, a small book published by W. B. Saunders Company, as a suitable book of tests and their technic and clinical significance.

If one will go a step farther and familiarize himself with the examination of stained specimens, some wonderful revelations in the nature of prognosis and diagnosis are in store for him.

The high blood-pressure obtained by means of the sphygmomanometer and characteristic of arterio-sclerosis and chronic interstitial nephritis should be familiar to all. The low pressure of tuberculosis and so characteristic of Addison's disease is just as important to estimate. And 50 per cent of people having a pulsus alternans, which can be detected by using the stethoscope and the blood-pressure apparatus, die in the course of a year.

The points I wish to leave with you are the following:

1. Laboratory diagnosis is not intended to replace clinical diagnosis, but to fortify it.

2. Certain cases are distinctly and definitely hospital cases, and an early correct diagnosis, with quick action, is imperative to save lives.

3. Familiarity with diagnostic apparatus makes the technic easy, and the deductions more surely correct.

4. Precise diagnostic conclusions are arrived at only after long experience, but the roughest examinations add much to the bedside findings.

5. Adopt some one method for every test and become thoroughly familiar with it.

DISCUSSION

DR. W. P. BALDWIN (Fargo): I would like to congratulate Dr. Lancaster on his paper. I think we have all learned that we have been very negligent in our laboratory work in general practice. Sometimes we have been unable to do it because we were very busy, but there have been other times when we could have taken time for a blood count and a thorough examination of the urine, and many times this would have saved us much worry.

DR. FRED EWING (Kenmare): I think there is one thing we forget in doing laboratory work, and that is to consider it from the purely commercial standpoint. It is the easiest money we can make. Patients would rather pay \$10.00 for making a complete examination, including the laboratory work, than half that amount for making half an examination. If we make it a rule to do these things and charge for them we will make more from the patients we take care of in that way than from all we do now. The work we do in the office is clear profit. When we go out into the country and make a trip, we often pay out more than we collect, but the office work is clear profit. Everybody these days is glad to pay for the service we actually give, not only in medicine, but in anything else.

DR. A. G. LONG (Grand Forks): I think it would be a very nice thing if you would all form the habit of taking a smear on a slide in every doubtful case and sending it in to the laboratory, but do not put the slides together right away—let them dry in the air first. Any of you who have had the experience of trying to pry apart two slides with pus on will know to what I object. Slides that are put together with pus or blood before

they are allowed to dry, are very unsatisfactory. The cells will digest themselves, and you will not be able to make a diagnosis. Such a smear is of no value for staining because the cells have all disintegrated. It may take a little longer to do it right, but, if the specimen does not get out in today's mail, it will go in tomorrow's and the patient will not die anyway.

DR. H. H. HEALY (Grand Forks): I appreciated the Doctor's paper very much. I have known him for several years and know that he is doing good work. His paper shows that he is really practicing medicine.

One of the things I wish to endorse is his point about case-reports. I suppose that most of us are keeping case-records of our patients—most of them, at any rate. Some of us are, perhaps, keeping records of only the more important cases. I wish to say that for ten or twelve years I have kept a record of every case that I have seen, and I think this record is one of my greatest assets. We simply cannot remember patients whom we have not seen for many years, but, if we can refer to the case-record before consulting the patient, it certainly is a great thing. It also impresses the patient. If they write in from another state or another part of the country and want advice or another prescription, you can turn to the case-record and find out just exactly what they had.

Another thing is regarding the microscope. It seems to me we are sometimes too ready to make a diagnosis of chronic nephritis on the presence of albumin in the urine. This may or may not mean much. It may mean a stone in the bladder or somewhere in the urinary tract, or pyelitis. That is overlooked very commonly, especially in little girls. In all cases where there is albumin in the urine, or even a suspicion of it, the microscope should be used.

Another observation: I do not know whether this has occurred to any of you or not, but, speaking of urine, have any of you noticed that the specific gravity during the last year is enormously higher than it was previous to July 1, 1919?

DR. LANCASTER (closing): I have nothing further to add except to say that I was prompted to read this paper by Dr. O'Brien, of Wahpeton, who is secretary of the county society. He thought it was a shame that men who had the knowledge they had, were not systematically examining the patient and giving him the stuff they really had, and he asked me if I would read such a paper as this. That is my reason for presenting it.

WHY A PUBLIC HEALTH NURSE?*

BY GERTRUDE M. RINES, R. N.
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Public health is an indispensable asset in the progress of any nation, and its attainment an object of the first magnitude. The more protection a people are offered, the more rapidly do

they advance in civilization, learning, and culture; and the ravages and misery from catastrophe and pestilence will be correspondingly less. This not only applies to the masses, but to the individual. We have read and discussed and also taken steps toward bettering condi-

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tions in the large cities, but as yet very little has been done to insure better health conditions in the urban and rural districts.

In the past the health of the people in rural communities has not been as good as it should be. The majority of country people think as they live rather secluded and in the open so much they cannot help but keep well. This sort of life is very beneficial toward the health of people, but there are other things to be considered.

Results of the physical examination of draftees in the United States Army show that the men who came from the rural districts show a higher per cent of physical defects than do city boys.

We should remember, then, that, while we are considering the conditions found among the boys in the United States Army, all of these boys are in the prime of life, and that they naturally are better qualified physically than people of any other age group.

When you stop to realize the fact that the United States Army struck out every third man because of physical defects, it means that at least one-third of the people are physically defective. The majority of defects found by the United States Army have been traced down and are found to exist in the children of today. For instance, in one of the counties of South Dakota during the past month, the physician and the public health nurse, after examination of a group of children, found defective vision, hearing, teeth, throat, and malnutrition (which is one of the greatest causes of tuberculosis, flat-footedness, weak hearts, etc.) to exist in similar proportion to that in men examined for army service.

The efficiency of a nation depends largely upon the health of its people. As Emerson has said, "The first wealth is health." It is utterly impossible for any individual, state, or nation to accomplish really great things without good health. For what affects one individual comes in time to affect many. So after all community health work is not altogether a national problem, but a community and individual responsibility.

Health education should begin in childhood. If all parents and teachers were wise in regard to health matters it would not be necessary to bring into a community or school a specialized health worker. But very few people are familiar with the right kind of health work needed for the public.

The public health nurse has been doing work in the larger cities for years, visiting the sick in their homes, giving general bedside care, visit-

ing the schools, etc. Wherever it is possible for the nurse to secure the services of a physician to help with the physical examination of school children, she does so; but many times the nurse is obliged to carry on this examination herself, and in the rural districts she examines the condition of school buildings, outhouses, etc.

One of the biggest fields for the community nurse is in the saving of babies' lives. It is here perhaps that the mother needs her most. The visiting or public health nurse has proven herself the most efficient agent for the all-important work of locating and looking after cases of tuberculosis in any community.

Do you realize the whole trend of modern medical science is toward the prevention of disease, and that the public health nurse is regarded by medical science as the most competent single agent in this work of interesting the public in health education, for, after all, the prevention of an ill is much better than the cure of an ill, and the greatest thing that is being accomplished today in a scientific way is teaching people how to live.

Through the co-operation of the county health officer, the county public health nurse can help trace the origin of communicable diseases which are so prevalent in our state, and particularly tuberculosis. We had in South Dakota 505 rejects from draft boards and army because of tuberculosis, which is our most serious national problem.

Smallpox at present exists in some counties in South Dakota, and is increasing, not decreasing. Why? Because of the indifference and ignorance of the people in regard to the disease. At one time many of these cases were of a malignant type, the mortality-rate high. But now, as the disease is of a milder type, people do not fear it, and they allow it to continue on. Even in a mild form it invariably leaves complications. Smallpox, as other communicable diseases existing in a community for any length of time, is a hindrance to the progress and efficiency of that community. The public health nurse is absolutely necessary in a community to help suppress communicable diseases.

In 1915 the first public health nurse came to South Dakota to spend a month or two in several counties where an adequate number of Red Cross Seals were sold in order to pay her salary. The writer was the fourth public health nurse in the state. At the present time we have twenty-nine public health nurses. Some are county

nurses supported by county boards of commissioners, city school nurses supported by boards of education, and some are being supported by Red Cross Chapters. Sixteen of these services were inaugurated by the Red Cross Seal Commission of South Dakota. At the present time there are at least thirty counties on the waiting list for public health nurses.

The surrounding states of Iowa, Wisconsin, Illinois, etc., have public health nurses in nearly every county. In 1919 health laws passed the legislature in seven states, making the physical education and training and examination of school children compulsory.

South Dakota has a County Nurse Law passed at the last legislature, which gives county commissioners the right to appropriate money for a county nurse and make the work permanent in the county. Several counties have done this and are so pleased with the work the county nurse is doing that they are now wondering how they got along without her. It is no longer a question of whether a county wants a nurse, but *how soon* can it get one.

The majority of health work in the schools should be supervised by the public health nurse.

Modern health crusade work, which is a system of health chores, has been introduced into thousands of elementary schools for the primary purpose of forming good health habits, enlisting children in community service, and controlling preventable diseases.

An eminent physician in a large children's hospital says that the modern health crusade work is the greatest institution for the health of children he has ever witnessed. It not only educates them in proper health living, but forms permanent health habits. If you want something to last one hundred years, plant a tree. If you want something to last one thousand years, plant a habit in a child, as this habit will be handed down from generation to generation.

In one room in a small city school in the state, 20 per cent of the pupils slept in homes where windows were never opened at night. Many of these children are among the poorest in school work. After following the crusade work for two weeks, the last child reported to his teacher that his parents permitted him to sleep with his window open. Another child, one of a family of seven, who has been sleeping in a closed attic, by persistent efforts succeeded in getting his father to cut a hole in the room and put in a window.

Another family who had not been getting milk for their children reported as using milk daily since finding the children are all malnourished.

Due to physical examinations and health records taken and kept by the superintendent of schools and public health nurse, children are very enthusiastic over all phases of health work, particularly the crusade work, and are becoming very intelligent in right living.

A large part of this work should and can be supervised by a public health nurse. Health work in the school is not a passing fad. The conservation of the child is like that of world's peace, must be on the mind of all humanitarian people. The child of today must be viewed as the raw material of a raw state. The school is the nursery of the nation. To conserve this raw material is as logical a function of the state as to conserve the natural resources of gold, coal and agriculture.

DISCUSSION

DR. P. HOLLINSWORTH (Sioux Falls): This paper by Miss Rines covers the subject of the public health nurse very broadly. She is familiar with conditions all over the state, while my own observations cover only the City of Sioux Falls. The visiting nurse, I think, has been highly approved in other places, and wherever she has been employed she has proven to be a valuable asset to public health, and we think that where patients have obtained public health nurses it shows that they are anxious to get well. In the first place, in order to have the public health nurse, we must improve the field we have. We must have adequate funds along these lines and good, adequate legislation, and, most important of all, we must have active interest taken by the medical profession. If the medical profession will not take an interest in public health lines, public health work will be only slightly efficient. You can appoint a health officer, you can have a veterinary inspector, a milk and food inspector, you can have a laboratory in Sioux Falls,—and we are getting numerous laboratories,—but, unless you concentrate the work, you cannot hope to accomplish very much. It is better to have chemical, serological, and bacteriological divisions in connection with our laboratories.

The visiting nurse is the most important of all when it comes to field-workers, and the more of them we can have the better. I think one of the greatest mistakes made along these lines is that our sanitary inspectors are not, as a rule, trained men. They are men usually with political affiliation, local or state, and they are not trained to do the work. When they inspect milk or meat they do not know how to do it. They do not know whether a man is putting out a good product or not. If we could have public health nurses, I am sure we should get more efficient public health work done.

DR. ALBERT C. CLARK (Woonsocket): There was one statement which the author made in her paper that is not true. She stated that it is hard to get the co-op-

eration of the medical profession in the examination of school children. I have had charge of the health work of our county for a few years, and I am glad to say at the present time we have a nurse on the job. We did not get this nurse through the County Board of Commissioners for a reason that I do not care to talk about. She is a Red Cross nurse, and I am thankful she is there. I shall co-operate with her in every possible way that I can.

It is deplorable to see a poor innocent child in a school suffering from a defect that is interfering with its work. That child is at a great disadvantage, and he probably has some defect which you as physicians are familiar with, but they do not recognize it. It is hard for us as physicians to go into the public schools and examine children because the parents are liable to think it is a mercenary motive on our part, but a nurse can go in there and in the regular routine work examine these children, and when I have advised that a physician should go with her I have found that in our county it has been taken to heart by the people, and these children have been treated for the troubles they had and have been made better than some of the other children.

I have been much surprised to find how much ton-sillar trouble there is, how many children there are with defective vision, and a good many other conditions which interfere with their progress in school. We are falling into line, and we are getting the services of these nurses who, in their faithful work, go about among the school children, find the defects, and have them corrected. I find in our community that the parents take kindly to the idea, and do not hesitate to take their children to physicians and have the defect remedied.

DR. J. G. PARSONS (Sioux Falls): I am sorry that I missed a part of Miss Rines' paper. There is one point I would like to emphasize particularly. Since we have Dr. Spafford with us, we can talk to him as a member of the Board of Regents, as well as a member of this Association. No one can doubt at all the remarkable benefit which accrues from the work of these visiting nurses, but I would have you bear in mind that the work of the visiting nurse is sporadic. Their work should be continuous day after day and right straight through the whole year. You will find the most inefficient teaching of hygiene on the part of the teachers of our state and all over the country, and that is a thing we have got to change if we are going to get anywhere with a matter of this kind. I have contended for a long time that we have got to have good, efficient teaching of hygiene on the part of teachers who are equipped to teach it in our public schools right straight along. There is a great dearth of teachers in South Dakota, as there is all over the land, but I believe we can make a good beginning by having our institutions furnish the proper instructions to teachers, furnishing those teachers, particularly of the normal schools, who are specifically trained in the teaching of hygiene, knowledge of what modern hygiene consists of, and of the methods of instructing the pupils who are under their supervision in matters of hygiene.

I would like to make a plea that the Board of Regents further this admirable work, which they started in Aberdeen, and there should be a definite, specific course in every institution of higher education in this

state which will qualify teachers for teaching hygiene day after day to the children under their charge; and, secondly, that they shall be given an adequate knowledge of hygiene; and, thirdly, that they should be taught how to teach hygiene to the pupils. I believe that is one of the biggest things that can be taken up. The preliminary work carried out by these visiting nurses will pave the way for the Board of Education to appreciate the importance of these things and to have superintendents understand the importance of it, so that personally they will see to it that this work is done properly, and, if it is done properly, it is going to help out wonderfully in getting the results we are looking for.

DR. F. A. SPAFFORD (Flandreau): In regard to the matter of the introduction of the teaching of hygiene into the different schools of the state, I think it is rapidly being provided for. I will assure this body that within the next year there will be a trained nurse in connection with every one of the public institutions.

In regard to the teaching of hygiene: I think that our text-books which have been adopted by Boards of Education throughout the state have been full of the veriest bosh upon the teaching of hygiene and sanitation. I do not want to be misconstrued in what I am saying, but this is due largely to the influence of certain people who are enthused in regard to the question of temperance. Our school books are filled with all sorts of imaginary diagrams and highly colored plates showing the terrible effects of alcohol upon the human stomach. I think the effect of alcohol upon the human stomach is a personal matter, and that the effect of alcohol upon the community is more important than these highly drawn illustrations demonstrate. It is that stuff that has led to the wrong teaching of hygiene and the practical application of sanitary conditions to sanitary instruction in our schools.

At Aberdeen we have entered into co-operation with the federal government. They furnish a certain amount of funds,—\$6,500 for the Department of Hygiene there. I am sure that great good has come from that department, particularly so far as the Aberdeen school is concerned. If that works out all right up there, we will enter into co-operation with other schools.

I told you last night that last winter the Board of Regents met in St. Paul with the Educational Secretary of the National Organization on Public Health Nursing from New York and threshed this matter out. I was authorized to correspond with different people, and you will be surprised to find how many of these different people you have to correspond with if you do this work canonically. There are all sorts of activities assuming control of this and that thing, and you must consult them all before you can do very much.

We have officially instituted a school of public health nursing, giving a postgraduate course for graduate nurses in connection with the University, and a lady from New York, thoroughly qualified, a college graduate, who is now taking postgraduate work in Columbia College, has been appointed Director of Public Health Nursing in the University, and the courses are along the line you have in Minnesota and several other states. They will be open for the reception of students at the beginning of the next fall term.

In regard to the statement of physical defects among men who were examined for the service, I think we can be proud of one thing, namely, that South Dakota in the first draft in 1917 stood at the head of all states in the Union in that it had a larger per cent of those found physically efficient than any other state in the draft. In the second draft of 1918, while we did not stand at the head, we stood in the first group of three states. In the first draft we stood away at the head. I think Nebraska came second. We stood 86 or 87 in physical efficiency. The next state that approached us was Nebraska with about 69 per cent, and North Dakota came third. In the last draft we stood second in a group of three states.

DR. H. M. BRACKEN (Minneapolis, Minn.): I did not think I would be called upon to discuss this subject. I can add very little to what has been said. Dr. Spafford brought out some excellent points in connection with this work,—the importance of it, the fact that steps were being taken to provide proper education for the work, and also the fact that there are so many agencies to be consulted in the work.

Of course, as many of you know, I have been engaged in public health work for twenty years, and no one can engage in public health work without realizing the importance of the nurse. I feel that we have to depend largely upon the nurse, the trained nurse; and I am glad to see we are coming rapidly to the point of county nurses. In the past it has been most difficult to get officials to agree with sanitarians on these questions, both local and state officials.

One gentleman spoke of the difficulty in getting a county nurse. I can imagine the difficulties without saying anything more. I think it is rather fortunate that the Red Cross is taking up this work of county

nurses. I do not know how far this organization will carry the work. I am sure it will co-operate with the state and local officials, and it should be the beginning of the establishment of county nurses.

The point was brought out that the doctors were not helpful. While that is true, it is excusable in various ways,—first, the doctors are busy men; and secondly, they get enough damning without butting in on a thing that does not belong to them. Primarily, it is the doctor's duty to treat the sick. Of course, as a good citizen he is interested in preventing sickness, and it is to the credit of the medical profession that they are all engaged largely in trying to prevent the very things that give them their living.

MISS RINES (Armour) (closing): In regard to physicians helping in the examinations of school children: I was misunderstood. I stated that it was impossible to get the rural or district physicians to help us out in the small or larger towns with the physical examination of school children. If the physician could help the nurse in obtaining data in regard to vital statistics, it would be of valuable assistance to us.

South Dakota, as many of you know, has been taken off the registration area because of inaccurate statistics.

Every branch of public health work should be carried on through the State Department of Health. In all public health work, including nurses' work, it should have supervision over all public health activities.

I really feel that South Dakota is coming to the front in public health work. South Dakota is a pioneer state, and we cannot expect to reach high standards as yet, but gradually we shall. I do not think there is any state in the Union that is coming to the front any faster than South Dakota. (Applause.)

UNUSUAL SYMPTOMS OBSERVED IN THE RESPIRATORY TRACT DUE TO CONDITIONS EXISTING IN THE ANUS AND RECTUM

By C. E. HENRY, M. D.
Commander M. C., U. S. N. R. F.
MINNEAPOLIS, MINNESOTA

The unusual symptoms here reported have been accumulated during several years of practice. Search of the literature has revealed but little bearing upon the subject, and the major portion found has had reference to the local infection. The evil results upon the respiratory tract of infections of the teeth, tonsils, and head sinuses are well represented in the literature.

My reason for reporting the following observations is the apparent effect of agents originating in the rectum, acting upon the respiratory tract.

Several years ago a young woman, a singer by profession, consulted me, giving the following history:

For several weeks there had been a gradual loss of voice, until at the time of the consultation

she could not speak above a whisper. She had been under the care of a very competent laryngologist. Her present trouble, in addition to the aphonia, was very painful bowel-movements. Examination revealed a fissure in ano.

She was given an ointment containing enough phenol to cause analgesic action, and was instructed to take an enema to clear the lower bowel and to apply cloths wrung out of hot water to the anus, and then to apply the ointment. This was to be continued a few days, after which she was to return to the office to have the fissure cauterized. She returned the next day, stating that soon after applying the ointment there was complete return of the voice. That morning her voice was only a whisper, but on repeating the treatment she was able again to speak aloud. The

sphincter was completely divulsed under ether anesthesia, and the fissure was given the usual treatment. The result was complete and permanent restoration of the voice.

This was, undoubtedly, an unusual type of nerve reflex, such as Byron Robinson discusses in "The Abdominal Brain" as observed in lower animals. His observation, however, is on vocalization caused by rectal stimulation, and he traces the path of the stimulation through the sympathetic nervous system.

It has been noted in several cases that after an injection of hemorrhoids with phenol or a phenol combination, the patient has reported taking cold on the way home from the office. The first two or three times this was reported, no connection was made between the office treatment and the bronchitis, but, when one patient complained that the bronchitis was more severe after each treatment, care was taken to examine the chest prior to the treatment of the hemorrhoids. The following case history best illustrates the reaction observed:

An old woman, aged about 65, very well in regard to general health, short and plump in build, rather nervous in temperament, has had rectal trouble for a number of years. About ten years ago she had injection treatment for large protruding piles, and was relieved until about two years ago, when puritus ani developed with a return of piles, not protruding in type. Examination revealed a typical puritus ani and internal hemorrhoids. No evidence of malignancy was apparent. She was very apprehensive of malignancy, as several members of her family died of cancer. Injection of the hemorrhoids with the phenol solution caused a bronchitis to develop within half an hour, which lasted from twelve to twenty-four hours.

This condition of bronchitis following an injection of hemorrhoids may be due to the same cause that induced an attack of asthma when hemorrhoids present became inflamed in the following case:

Patient is a business man, aged 48, and has been subject to attacks of hay fever and asthma for years. It is absolutely necessary for him to make a change of climate during the hay-fever period. At this time the asthmatic condition is more pronounced; it is much worse if the bowels become constipated or if there is a diarrhea irritating the piles.

The most feasible explanation of these cases of bronchitis and asthma is that there is an anaphylaxis.

Gottlieb, in discussing bronchial asthma, states;

"In cases taken at the hay-fever and asthma clinic of the University and Bellevue Medical Clinic, the bacteriology of nasal passages, pus from tonsils, tooth-sockets, bronchial secretions, and stools is obtained. Examination of the stool may be open to criticism, but a case of colon bacillus anaphylaxis came under my own observation, and I know of several more in the practice of physicians of my acquaintance."

The following is Howe's opinion in regard to asthma; "Bronchial asthma is not a disease by itself. It is not a spastic or spasmodic condition of the circular muscles of the bronchioles, due to a neurosis, but is a group of symptoms that indicates an anaphylactic condition of the lower respiratory tract. The absorption of an undigested or modified protein from the intestinal tract in a sensitized person produces anaphylactic conditions of the lower respiratory tract, but not of the upper."

The following case came under my observation about ten years ago. The patient is now very well and shows no symptoms of the previous condition.

Patient, a girl, aged 12, has not been well the last two years. She has had the usual diseases of childhood. Present illness started with an attack of typhoid; has not been able to regain her normal strength and weight, although she made some improvement for a few weeks when first out of bed. Has had several diagnoses of pulmonary tuberculosis, though repeated examination of sputum was negative. The patient looks to be a typical tuberculous case. The chest is quite thin, and in both apexes there are fine crepitant râles; otherwise negative; abdomen, negative. The patient stated that her bowel movements were very painful unless she took large doses of salts or senna tea. This led to an examination of the rectum and anus, and a long deep fissure in ano was discovered. It was cauterized with stick silver nitrate. The patient started to gain almost from the day of the cauterization.

The sharp, hacking cough, loss of weight, crepitant râles, variable appetite, and occasional temperature, no doubt, had led to the diagnosis of tuberculosis as a sequel of the typhoid fever, which diagnosis, however, proved to have been mistaken.

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**THE
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EPILEPSY FROM UNDESCENDED
TEETH

One constantly sees surprising results in the development or disappearance of epilepsy, and a great many physicians still hold to the old view, that the child who has an epilepsy will probably outgrow it. This, of course, is a fallacy, and there are probably very few cases of true epilepsy, or even of well-simulated epilepsy, that are outgrown. The fact is called to mind that sometimes these patients get better in spite of the doctor, or with or without the aid of the doctor. As these cases are very rare, one should not hesitate to publish the fact that it is very difficult to make a prognosis, in the case of an epileptic child, as to the outcome of the epileptiform attacks.

A case was seen by the writer seven years ago (1913) wherein a child of two and a half years had suddenly developed what seemed to be a typical epilepsy,—that is, he had a convulsion, which was repeated in the course of a few days, and later the convulsions became more and more frequent until at the end it was not unusual for the child to have twelve to fifteen attacks a day. This boy went through the hands of two or three surgeons and medical men. His tonsils were removed; and he had other operations on his body, such as circumcision, which it was hoped would remove the cause of his epilepsy. When he was seen and closely observed he presented all the symptoms of a mentally defective child

plus an epilepsy, and after some observation an unfavorable prognosis was given and he was returned to his home as incurable. His attacks had lasted for many months, and then, much to the surprise of his attending physician (Dr. W. H. Cuthbert, of Hillsboro, North Dakota), the boy shed his primary teeth, and his permanent teeth developed in proper order; and from the time the development was completed his epileptiform attacks disappeared, so that he was looked upon as a normal, well child. Of course, time enough has not elapsed to know or predict that his recovery is permanent, but the history is suggestive that more attention should be paid to the undescended teeth than has been given before.

Another case which was related by a practicing physician was that of a child having a disease of the primary teeth. During that time the child suffered from convulsive attacks and was looked upon as an epileptic. As soon as the temporary teeth were eliminated from the mouth and the true teeth appeared in their normal position, all attacks ceased.

These two cases are perhaps only two of many which have either been overlooked or disregarded, particularly from the tooth point of view. It simply emphasizes what has been developing in the dental field,—the necessity of caring for the teeth of the child. There are men now who devote themselves to and specialize only in children's teeth, and, undoubtedly, they could record a great many cases of either seemingly organic nervous disease or functional nervous disease from undeveloped and undescended teeth. Not infrequently, too, the child, or the young person presents himself to the dentist, and the x-ray discloses molars which lie horizontally in the jaw, unable to descend, but capable of creating a good deal of disturbance by pressing on the molars in their immediate vicinity. The question of removing such teeth is one of doubt, that is, a molar of this type, or four molars of this type, in one individual's mouth, require the services of an expert, a skilled surgeon-dentist, because it means a capital operation and must be done with the same care and skill as is required when operating on other parts of the body and skin, the head included. We do not know yet, in our young children, the character of the nervous system which is growing with great uncertainty until our attention is called to it by the irritation or pressure upon surrounding tissues, which may involve a nerve filament, this filament, in turn, carrying wrong impressions to the brain cells and thus causing an epileptic discharge.

These suggestive cases bring again to our investigating minds the necessity of making more careful examination of everything that might be an epileptic factor, so that there will be no more mistakes made than is absolutely compatible with ordinary practice. But who is to finally judge of all these conditions,—a general practitioner, the man at home and, if necessary, his associate or consultant elsewhere?

HOW ARE YOU GOING TO PAY YOUR RENT?

I rise to remark, in language plain, that the way of the "realtor" is peculiar! This new term "realtors," as now used has been determined in court as indicative of an association or agents who rent buildings to occupants and who also form a part of a national association. Those who do not belong are not "realtors." Unfortunately, most of the buildings, at least in Minneapolis, which are to be rented to physicians, and perhaps others, are controlled by one or more realtors. Apparently they have decided that the time is ripe for a realtor's profit,—at least so we hear via the underground system.

A banker in a small town in the country owns a building which houses his bank and the upper floor of which is occupied by office men, and among them are two physicians. He told them that he would be obliged to raise their rent on account of the increased cost of coal and other things, and as they were paying twenty-five dollars a month for their space he thought he should raise it to thirty dollars. They both laughed and said it would be all right. They accepted the increase, which was modest, without a murmur. But, when we come to the city realtors who control the buildings in which the doctors have their office quarters, we are confronted by the promise that when our leases expire the rent will be advanced from 100 to 130 per cent. That is virtually from \$1.35 per square foot a year to \$3.00 per square foot a year. The men who pay \$280 or \$290 a month in rent will pay in the neighborhood of \$660.00 when the new rates go into force. The realtors claim that they can present figures which show the necessity of increasing the rental to this degree. The overhead expense in a doctor's office is a tremendous thing if his business is carried on properly. With his assistants, his stenographer, and the rental for floor space, he expends what formerly would have been a good yearly income. And now, confronted with this new 130 per cent increase, he

will be working twice as hard and earning a lesser amount, proportionately, than ever before. More than one-third of his income will go to meet his office expenses, and more than the second third will be required to meet his household expenses; and out of the last diminished third he will have to provide the essentials and extras.

So far the medical man has been very fair and very conservative in his fees, and THE JOURNAL-LANCET has maintained, as has the Hennepin County Medical Society, that increase in doctors' fees should be made very gradually and with great moderation. If this tremendous increase in our rental is to prevail, our fees may have to be raised in self-defense. But why should everyone increase the cost of living? Expenses are increased from the highest to the lowest for not only the employers, but the employees. It simply means a raise in wages, a raise in rent, a raise in other living expenses, while the actual underlying expense is practically the same as it was before. No one benefits except the man who is in power and who can demand an increase in the price of floor space. True, his coal bill is bigger, and he may or may not have advanced the wages of his care-takers. Sometimes he has and very often he has not; he has simply promised. If there is anything that is going to precipitate a financial depression or a financial catastrophe it is the constantly increasing demand for more money.

The doctors have one or two recourses left open to them. They must either move into cheaper quarters, that is, poorer quarters, or occupy offices in residential districts; purchase a house and remodel it, or, what is most likely, put up their own office building. The latter plan is under consideration in Minneapolis, wherein the architect and the contractor are willing to take their fees in stock of an incorporated building company. This plan has been advocated for a long time, but the doctor, because he was a poor financier, hesitated about taking the responsibility. The result is that now he is all dressed-up he has no place to go. A capitalist in Minneapolis has promised, and he has money enough to make his promise good, that, if a sufficient number of medical men will engage offices and pay a reasonable rental over a period of years, they will in the end own their own building, and they can then fix their own charges.

The men whose leases run out this year are entitled to renewal, so the realtor says, at a fixed advance in price for one year only. Does the realtor expect that the following year he is going

to put on a little more in the price that is already crushing in the square-foot proposition, or does he think that perhaps by the end of another year rents will go down? There is very little time to consider this question. If the doctors are going to combine and construct a building of their own they must get at it very soon. If the various groups of medicine that are being organized in Minneapolis at the present time are going to move into their own quarters, or new quarters, several office buildings occupied by medical men at the present time will be more or less depopulated.

Is there a new doctor daring enough and extravagant enough to come in and rent space at \$3.00 a square foot? Why is it necessary for medical men to be way down-town? The telephone has revolutionized the office man and his locality. Some doctors do not have even a sign on their residences, because the telephone directory supplies the need. Consequently, medical men might with perfect assurance, and without loss of business or prestige, move into a less expensive quarter of the town and thereby save themselves money and help defeat the ends of the building profiteers.

THE AMERICAN RÖNTGEN RAY SOCIETY

The meeting of the American Röntgen Ray Society in Minneapolis on September 15 and 16, after a pleasant day spent by the Society at the Mayo Clinic, was a far greater event than the medical profession of the Northwest had been led to expect. The registration reached over seven hundred, and the attendance at the meetings was uniformly large. The papers were both excellent and interesting, not alone to the expert röntgenologist, but to even the general practitioner. In one form or another, they practically all dealt with diagnosis, and many of them presented new facts in this field.

The accommodations for the Society in the new Curtis Hotel were admirable, the large dining room being an excellent lecture room. The corridors were filled with commercial and professional exhibits of great interest, among them being one of over two thousand slides from the Mayo Clinic.

Minneapolis was honored by the presence of this group of men, and it is gratifying to know that the visitors were delighted with the city and their reception here.

Dr. Frank S. Bissell, at our request, has fur-

nished our readers an excellent report of the meeting, which, he informed us, was the largest in the history of the Society.

AN ABSENT EDITOR AND A PRESENT DEVIL

The other day our editor ran away ("a vacation") on a pleasure trip to the mountains, and left the devil (printer's devil, please, which is a polite word) in his chair, with instructions to write such editorials or other unimportant matter as may be needed in this issue to fill up any of the departments, which, in their order of importance, as the devil sees them, are as follows: "Advertising Dep't," "Publisher's Dep't," "For Sale and Want Items Dep't," "News Dep't," "Book Review Dep't," "Reports of Societies Dep't," "Correspondence Dep't," "Articles Dep't," "Miscellaneous Dep't," and "Editorial Dep't (that's the whip's cracker)". The whip is now in the hands of the devil, and he, as if to the manor born, is editorialing against time—or space ("ten inches needed, Sir").

"We," the devil, have quoted the call as it came from the make-up man,—“ten inches, Sir, for the editorial department,”—and “we” must fill the void, that is, “we” must complete the void.

Having the privilege of opening the editor's mail in his absence, “we” find the needed copy at hand. It came in the morning mail, and is two views of the absent editor, who is now a deserter. Our readers shall have the benefit of this confidential correspondence, for the two letters form a composite of the genial editor (that's the devil's own phrase).

Incidentally, these two letters, with many others, were drawn out by the receipt of our annual subscription bills, which always call forth “opinions.”

The first letter is from a Minnesota man who is universally honored for his scientific attainments, though he is classed among the “old practitioners,” and for his sterling character. He says:

I thank you for a good journal and honest, ready service.

The hearts of both the absent editor and the present devil are cheered by such words from such a source.

The other writer is personal, possibly more discriminating. He says:

The paper is^a certainly a dead one. Why don't you [that is surely meant for us, the “devil”] put a practi-

cal general practitioner at the head of it instead of a specialist whose specialty is the unbalanced mentally?

Must the temporary editor answer that letter? Certainly. Well, if a "general practitioner" had been the editor and had received that letter he would have been grievously hurt, and would also have been obliged to send to a couple of commercial laboratories for a diagnosis, with the almost certain return of one negative and one positive Wassermann; but the specialist, our editor, had he received it, would have snapped back his diagnosis, "unbalanced mentally."

This fills the space open—ten inches.—THE DEVIL.

REPORTS OF SOCIETIES

TWENTY-FIRST ANNUAL MEETING OF THE AMERICAN RÖNTGEN RAY SOCIETY

Held in Minneapolis, September 16 and 17

REPORTED BY DR. FRANK S. BISSELL

After spending a delightful day in Rochester, as the guests of the Mayo Clinic, the members came to Minneapolis in a special train, and held a two-day meeting, some of the principal features of which the writer will record.

"Studies on the Reduction of Bone Density" was presented by Dr. Dallas B. Pneumister, of Chicago, and was of peculiar interest to röntgenologists, as well as to surgeons and pathologists. His talk was illustrated by microscopic slides of specimens cut after röntgenograms had been made. Giant cells, fibroblasts, and many other cells assume the action of osteoclasts. In the presence of pus, the reduction of bone density is explained by the direct contact of living bone with osteoclastic cells. Bone bathed in pus will retain its normal density if not in contact with cells having osteoclastic properties. Hence the persistence of sequestra of normal density in osteomyelitis, while the living bone shows reduced density.

Reductions in density are due almost entirely to removal of lime salts by this cellular activity.

Specific instances of local reductions in density were discussed under the head of inflammation, tumors, cysts, and Perthes' disease.

Dr. Walter Alvarez, of San Francisco, delivered the first Caldwell Lecture in commemoration of Dr. Eugene Caldwell, one of the martyrs to the science of röntgenology. This lecture, given by some scientist doing original work of interest to röntgenologists, will hereafter be an annual event of the Society.

Dr. Alvarez' subject was "Peristalsis in Health and Disease." The intestinal tract is autogenetic in its muscular action. A section of the bowel may be entirely stripped of all extrinsic nerve fibers without the slightest interference with its peristaltic action. This experiment conclusively disproves the common text-book assertion that the function of peristalsis is dependent upon a nerve supply not intrinsic to the intestinal wall. In fact there is much evidence to be found in the study

of the smooth muscle tissues of certain low forms of animal life entirely devoid of nerve supply that the quality of rhythmic action is inherent in such muscle when under the influence of the proper stimuli.

The second important point in Dr. Alvarez' lecture is the explanation of the natural course of ingesta through the alimentary tract. He states that there is a gradient of muscular activity progressively decreasing from the cardia to the sigmoid flexure and pelvic colon. The constant tendency is for food to be carried from the section of greater activity to that of lesser activity. In the presence of an irritating lesion, such as ulcer or an inflamed appendix, this gradient may be reversed,—the area of greater activity being now distal to that of lesser activity. This fact explains the delayed motility proximal to a lesion, as well as the backing up of bile into the stomach when such inflammatory processes as appendicitis are present.

He shows that this gradient is an intrinsic quality of the bowel wall by the following experiment: A section of the bowel is severed, reversed, and stitched in place without disturbing nerve fibers. Although the canal remains patent, a delayed motility is noted, and this is followed by obstruction due to the reversed peristalsis of the reversed section.

Dr. Gonzales Martinez, of Paris, presented an exhaustive treatise upon "Röntgen Diagnosis in Diseases of the Heart."

Perhaps the most startling and interesting presentation of the entire meeting was that of Dr. Wm. H. Stewart, of New York City. In co-operation with Dr. H. L. Lynah, he has been injecting bismuth suspensions in olive oil into abscess and bronchiectatic cavities through the bronchoscope. Stereoscopic radiographs then show the exact location and extent of the cavity and the pus-infiltrated area. Also the injection has been found to exert a most pronounced and beneficial effect upon the course of the disease process. No ill effects have been noted.

A noteworthy symposium was that devoted to "Pneumoperitoneum." The newest work was that reported by Dr. I. C. Rubin, of New York, whose method is to inject oxygen into the peritoneal cavity through the uterine canal, thus demonstrating the patency of the Fallopian tubes.

If, under sufficient pressure, determined by a sphygmomanometer gauge, no gas escapes into the peritoneal cavity, a diagnosis of occlusion is made from the röntgenogram and the cause of sterility determined.

Dr. Alvarez pointed out the advantages and lesser disadvantages of carbon dioxide in producing pneumoperitoneum, and especially emphasized the great usefulness of this method in gall-bladder diagnosis. Dr. Stewart in the discussion showed a series of lantern slides, which clearly demonstrated the usefulness of the procedure for the demonstration of many obscure lesions within the abdominal cavity.

There were several papers devoted to treatment by means of radium and the x -rays, but no new observations of importance were reported.

Another important paper was that of Dr. D. C. Jarvis, of Barre, Vermont, whose x -ray work is largely among workers in the granite industry. His plates show changes extremely like those observed in pulmonary tuberculosis. Differentiation must, therefore, depend upon the history, occupation, and the fact that

the lesions are so marked that, if due to tuberculosis, the clinical diagnosis would be simple. That many of the changes noted are due to lymphatic engorgement, rather than to actual deposits of granite dust, is indicated by the rapidity with which the lung fields clear up when the irritant is withdrawn.

Dr. Hollis E. Potter, of Chicago, demonstrated for the first time in public the results obtained by the use of the new apparatus devised by him. This is an application of the Bucky diaphragm to the radiography of deep-lying structures, which in the past have been so difficult to ray satisfactorily by reason of the secondary-ray action. This apparatus will inevitably result in marked improvement in the excellence of spine radiography, especially in heavy individuals.

The manufacturers' exhibit was of more than ordinary interest. Among other things a perfected stereoscopic fluoroscope was shown for the first time. By means of rapidly revolving shutters and two x-ray tubes operating alternately, it is possible to obtain a stereoscopic image upon the fluoroscopic screen.

All of these papers will appear in full during the year in the *American Journal of Röntgenology*.

MISCELLANY

J. HARLAN STUART, M. D. AN APPRECIATION

The following beautiful tribute to a highly honored member of the old-school physicians of Minneapolis was presented before the Hennepin County Medical Society by a fellow member, alike respected by all and now numbered among the very few of that group of our men.

Doctor J. Harlan Stuart was born in Guilford City, North Carolina, in 1836. His ancestors were Highland Scotch. He graduated from New Garden Boarding School, and afterward attended Haverford College, near Philadelphia, and after graduation studied medicine, graduating from the College of Physicians and Surgeons of New York in 1867. He first located at Carthage, Indiana, where he practiced a few years, and then moved to Lawrence, Kansas. After practicing several years there he came to Minneapolis in 1882, where he resided up to the time of his death.

On coming here he became a member of the Hennepin County Medical Society and exerted a great influence during its troublous times, and aided more than anyone else to reconcile the various factions. He was elected president of the society for two successive terms, and was the only man to be so honored, with the exception of Dr. A. E. Ames, the first president of the society.

He was an ardent advocate of the noon-day meetings, always attending, and during his sickness he frequently enquired how the meetings were attended.

He was strictly ethical in all his dealings, and was a member of the Board of Censors for many years.

He was a man universally respected and looked up to as a model in every way. As one said after his

death, "His life was a benediction." He was a prominent member of the Society of Friends and was on the advisory board of Penn College, Oskaloosa, Iowa, and Earlham College, Richmond, Indiana.

During the last year of his life he was subject to periods of great suffering, which he bore with Christian fortitude, always cheerful and optimistic; and only two weeks before his death he spoke of the hope of again getting out. In the last conversation I had with him, however, he showed that he realized his condition and said, "I am in the valley of the shadow of death and have no fear." At the age of 84 he passed quietly away, so quietly that his watchers did not realize he was gone.

Thus passed one of the last of the physicians of the old school, a worthy representative of the family physician, who was advisor and friend, as well as physician.

R. J. HILL, M. D.

HARRY R. NORDLEY, M. D.

Dr. Harry R. Nordley, for six years a practicing physician in Minneapolis, and assistant to the city chemist, died at the summer home of his parents, Mr. and Mrs. Nordley, at West Arm, Lake Minnetonka, of military tuberculosis.

Dr. Nordley was born in Minneapolis November 8, 1887. He was graduate from South High School in 1906, and from the Medical Department of the University of Minnesota in 1912. He practiced at Blackduck, Minnesota, for two years and then came to Minneapolis.

He enlisted in 1917, and was a member of Navy Base Hospital No. 13, stationed at Minneapolis. He was a member of the Hennepin County Medical Society and the State Medical Association.

Funeral services were held from the home of his parents, 2013 Fourth Street South. Interment was at Lakewood. The active pallbearers were Mr. Hendricks, Dr. Thorwald Peterson, Dr. Josewitz, Dr. Undine, and Mr. Hugo Peterson. Besides his parents, two brothers, George and Arthur, survive.

CLYDE A. UNDINE, M. D.

NEWS ITEMS

Dr. F. N. Bjerken has moved from Red Wing to St. Hilaire.

Dr. C. K. Onsgard has moved from Rushford to Halstad.

Dr. J. Y. Batterton has moved from Elk Point, S. D., to Colton, S. D.

Dr. Edwin S. Stenberg, of Sioux Falls, S. D., was married last month to Miss Erna Jones, of the same city.

Dr. L. E. Claydon, of Red Wing, starts an around-the-world trip on October 23. He will be absent six months.

Dr. J. L. Adams, after practicing in Morgan

for nearly thirty years, will spend the winter in California, and perhaps locate elsewhere upon his return.

Dr. W. B. Grinnell, of Preston, has sold his hospital building to be used for a residence. He announces that he has plans for a new hospital in that city.

Dr. S. Sprecher and family, of Tripp, S. D., will go to Mission, Texas, for a six months' rest. During his absence his practice will be in charge of Dr. E. M. Christensen, of Chicago.

It is announced in a Long Prairie paper that a printer of that city will establish a \$50,000 sanitarium in Minneapolis to cure cancer by a method by which his mother was cured.

The American College of Surgeons will meet in Montreal on October 15th. A large number of new members will be received, and in the number will be several Northwestern men.

The club women of St. Paul will ask for the appointment of Dr. Auten Pine as a member of the State Board of Health, and no man will oppose so excellent a choice by the Governor.

Minneapolis and the Northwest drew the annual meeting of the American Röntgen Ray Society in spite of the fact that the Twin Cities have only three members, namely, Drs. F. J. Bissell, C. A. Donaldson, and R. R. Knight, all of Minneapolis.

An Italian "physician and surgeon" has been victimizing his fellow countrymen in Hibbing. He received considerable sums of money from them as advance payments for wonderful cures, and left town.

The Medical Detachment of the First Minnesota Infantry was organized at Milaca last month. Dr. H. P. Bacon was made captain of the Detachment, although he is past the age limit for such service.

Dr. Gustaf Eklund, of St. Paul, a recent graduate of Northwestern and an entered interne of the Miller Memorial Hospital, of St. Paul, has gone to Honduras, South America, and will be absent several months.

The Southern Minnesota Medical Association will hold its next semi-annual meeting at Mankato on November 29 and 30, and will have an excellent program. Mankato will furnish an ample meeting place and the best of hotel accommodations.

The Hennepin County Medical Society has begun at its weekly noon-day meetings a symposium on fractures arranged for by Dr. A. T. Mann. Minneapolis.

The first point taken up was the principles of the treatment in fractures, presented by Dr. E. K. Green on September 22. The symposium will cover four meetings.

The Yellowstone Valley Medical Society of Montana, at its annual meeting last month elected the following officers: President, Dr. F. B. Clarke, Billings; vice-president, Dr. H. E. Armstrong; secretary, Dr. L. W. Allard; treasurer, Dr. C. L. Hart. Dr. Hart resides at Huntley, and the other officers in Billings.

At the recent South Dakota State Fair, held at Huron, the department of pharmacy of the State University made a highly creditable exhibit of poisonous and medicinal plants raised in the garden of the department. This is the only garden in the country where both medicinal and poisonous plants are grown.

Dr. Alonzo T. Conley, of Cannon Falls, died last month at the age of 73. Dr. Conley graduated from the State University of Iowa Medical College in the class of '74, and had practised in Cannon Falls for forty-four years, and had been prominent in medical circles of Minnesota during his entire practice. His sons, Drs. A. A. and H. E. Conley, are practicing physicians in Cannon Falls.

Dr. Arthur G. Kessler, of Crookston, died last month at the age of 45. Dr. Kessler graduated from the Illinois Medical College with the class of '17. He served in the World War, and upon his return he was made superintendent of the Ottertail State Tuberculosis Sanatorium at Battle Lake, and was later called to Crookston to take charge of the Sunnyrest Sanatorium, conducted by Polk and Norman counties.

LOCUM TENENS WANTED

For one month, beginning October 10 to 15, in general practice in Southern Minnesota. Will pay cash. Address 389, care of this office.

PHYSICIANS WANTED

Two excellent unopposed locations in Minnesota towns with splendid farming community. Collections 100 per cent. Nothing to buy—step right in and make money from the start. Address 388, care this office.

OFFICE POSITION WANTED

A young woman who has taken a two-year course in a hospital training school and done office work wants a position in a Minneapolis doctor's office at moderate salary. Address 398, care of this office.

PERCY CAUTERY FOR SALE

One Percy cautery complete with rheostat, four shanks, and eight tips is offered for \$35. Address or call upon the Drug Department of Ashbury Hospital,

PHYSICIAN WANTED

Wanted in a live western North Dakota town a physician who will locate there at once. Good location, and no competition. Graduate from an A-1 school preferred. Address 385, care of this office.

PHYSICIAN WANTED

To locate in a good farming and ranching country in North Dakota; large territory and people all well-to-do; good crops. For particulars address 386, care of this office.

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Meyer's Interruptless Transformer No. 2, 220 volts; also tube stand, gas tubes, hand fluoroscope, intensifying screen, and cassette, all practically new. For further information, address Dr. H. G. Noble, Brookings, South Dakota.

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Unopposed village and country practice in North Dakota amounting to \$7,000. Practically no competition. Small investment; sure income. Address 390, care of this office.

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Scanlan-Morris high-pressure hospital sterilizers, two five-gallon water-tanks, and one utensil steam, one instrument sterilizer, electric. Bargain. St. Luke's Hospital, Minot, N. D.

OFFICE POSITION WANTED

A young woman who has had about a year's experience in the office of an eye, ear, nose, and throat specialist, desires an office position wholly in the waiting room or as a doctor's assistant. Thoroughly competent and of good address. Best of references. Address 397, care of this office.

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I desire to correspond with a city or a hospital that is in need of a good surgeon and diagnostician; or I will consider a partnership in a private hospital or a first-class industrial position. Address 391, care of this office.

ASSISTANT WANTED IN EYE, EAR, NOSE AND THROAT WORK

A well-known Minneapolis firm of eye, ear, nose and throat specialists want a young man as assistant. Splendid opportunity to advance in this specialty. Prefer an unmarried man, and must be licensed in Minnesota. Salary will be made satisfactory at all times. Address 394, care of this office.

ASSISTANT WANTED

As soon as possible, a graduate of A-1 school as assistant in large general practice; town of 600 in Eastern South Dakota. Will pay \$200 a month and all expenses pertaining to practice with monthly bonus depending on the amount of work handled. Prefer a recent graduate who has had hospital training. Modern office and library available. Address 392, care of this office.

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Two offices and waiting-room for one physician offered for rent in the Pillsbury Building, Minneapolis. Address or call upon Dr. H. H. Thompson, 813 Pillsbury Building, Minneapolis.

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Office and lot, furniture, instruments, and drugs of the late Dr. Mathews. Napoleon is a village of between 600 and 700 people, with a rich surrounding territory. Address Mrs. Marie L. Mathews, Napoleon, N. D.

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In North Dakota. An unopposed town and country practice of over \$7,000 cash yearly. Surgeon can make more. Rich farming community; A-1 roads; collections 99 per cent; free rent; hospital promised; good school, churches, beautiful natural scenery. Nearest doctor sixteen miles. Established practice of fourteen years. Will sell for less than cost of office equipment and drugs and thoroughly introduce. Going to specialize. Address 382, care of this office.

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Unopposed village and country practice in the richest and best farming section of Minnesota, about eighty miles from the Twin Cities. Practice mostly cash, and all good. Practice given to purchaser of small office equipment and household goods. Office in fine residence, with good garage. Rent cheap. No better field for country practice anywhere. Address 395, care of this office.

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Unopposed \$5,000 practice in town of 400 in wealthy Norwegian community, sixty miles from St. Paul; collections 99 per cent and prompt; good fees; a farmers' town; farmers own creamery, elevator, lumber yard, and co-operative store, and most of stock in two banks with deposits of \$1,200,000. Competition from 7 to 15 miles distant. Practice can be doubled by right man. Office equipment and practice, \$500. Am leaving to enter firm in a larger place. Address F. A. Engstrom, M. D., Wanamango, Minn.

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South Dakota practice of \$8,000 to \$10,000 a year. Town of 700 in beautiful prosperous country. Will either sell excellent equipment, including drugs, for cash invoice and rent office-residence for present or sell everything on terms to suit responsible party. Here is a fine opportunity. If you have the means act quick. Address 384, care of this office.

ASSISTANT WANTED WITH VIEW TO PARTNERSHIP

As soon as possible, a married man, graduate of A + school, as assistant in country and general practice, including surgery; town of 700 in eastern South Dakota. Will pay \$250 a month and furnish everything pertaining to practice. Opportunity for partnership later. Income from \$9,000 to \$10,000 a year can be increased proportionately by two. Address 379.

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The American Photo Chemical Company, of Rochester, N. Y., makes such a plate. It is proof against damage in warm weather and under the condition of general use. These plates are called Diagnostic X-Ray Plates, and so called for evident reasons.

TWO NEW ABBOTT PRODUCTS

It is announced by The Abbott Laboratories that they are now producing in quantities both Acriflavine and Proflavine, the two antiseptics which are meeting with such success in the treatment of gonorrhea.

Doctors who are not familiar with these new antiseptics are invited to send for literature to The Abbott Laboratories, Chicago.

THE HUNT SUNDRIES CO., INC.

This company deal in hospital supplies and surgical instruments, and are the Northwestern agents of the Frank S. Betz Co., very large manufacturers and importers in this line.

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The company's Twin City salesrooms are at 706 First Avenue North, Minneapolis.

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Benzyl benzoate, put up in gelatine globules and called "Benzylets" by Messrs. Sharp & Dohme, of New York, an absolutely dependable house, gives physicians a safe non-narcotic that should be in every medical man's bag. Benzylets are efficacious especially in dysmenorrhea, "true" asthma, whooping cough, hiccough, etc., giving prompt relief to conditions of a spasmodic nature.

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ADRENALIN BY THE MOUTH OR RECTUM

To obviate the necessity of giving adrenalin hypodermically the oral and rectal methods have been tried. Lesne says that adrenalin is not destroyed by pepsin nor pancreatin but that the liver seems to deprive it of some of its toxicity so that it has to be given in large doses to obtain effects. Adrenalin is much more toxic when given by the rectum and Lesne infers that the abundance of the anastomoses of the hemorrhoidal veins enables the adrenalin to be carried directly to the vena cava. For this reason it seems preferable to give adrenalin by the rectum, rather than by mouth because

it gives results with smaller doses. (Soc. med. des hopitaux de Paris, June 11, 1920.)

THE WAUKESHA SPRINGS SANITARIUM

The editorial and business managers of THE JOURNAL-LANCET take very great pleasure in the uniformly high character of the health and like institutions advertised in its columns. There is not one of doubtful character, and some of them are conducted by men of national reputation, even of world-wide reputation, in their special lines; therefore we can commend these institutions to our readers with the full assurance that they are worthy of the fullest confidence.

Such an institution is the Waukesha Springs Sanitarium for the care and treatment of nervous diseases, and of which Dr. Byron M. Caples is the medical director. Dr. Caples is a man of high reputation, of marked ability, and of sterling character. He has an able superintendent, Dr. Floyd W. Alpin.

THE WINKLEY ARTIFICIAL LIMB CO.

The artificial leg of today is a work along surgical lines so nearly perfect as to make a large proportion of such legs indistinguishable by the passer-by from natural legs, and to make all of them exceedingly useful to their wearers.

This high degree of excellence in the artificial leg is largely due to the above-named institution, which is the largest makers of such legs in the world. They are pioneers in the work, as well as leaders, and the foremost surgeons of the world commend and recommend the Winkley artificial limb.

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The scientific proof that an antitoxin for one disease has been discovered is not necessarily proof that an antitoxin exists for another disease, but it is proof that an antitoxin for such disease is possible, and it gives warrant for the belief that, when a reputable scientific house claims the discovery of such a toxin, such firm is telling the truth.

When the well-known Lederle Antitoxin Laboratories, of New York City (511 Fifth Avenue), claim that their "Toxin-Antitoxin-Mixture" confers permanent immunity against diphtheria, the profession must take notice of the fact. Such is the claim of these laboratories, and their literature upon their products is well worth sending for. Certainly every person, child or adult, exposed to this dread disease, should use the protection of this new antitoxin.

NUJOL.

The indiscriminate use of cathartics for the speedy movement of the bowels has done the medical profession more harm than any other form of medication, and it has left a trail of evils among the laity that can hardly be estimated. The use of a suitable lubricant to aid the natural means of regularly evacuating the digestive tract, especially to make peristalsis effective, is rapidly doing away with many of the cathartics formerly used in routine practice.

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These are the best-cooked cereals in existence. The flimsy texture and the nut-like taste make them most inviting.

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the great prospective demand for it led the Standard Oil Company of New Jersey to establish modern scientific laboratories for its production, and with their unlimited supply of raw material Nujol is now made as well as scientific management can make any product. It is absolutely reliable.

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It is one thing to sit in an amphitheatre watching a surgeon doing high-grade work, and quite another thing to do the work yourself under the guidance of a high-grade surgeon compelling you to do the work in a high-grade manner. In the latter way the surgeon who is doing work in a manner unsatisfactory to himself can readily learn, when properly directed in every step of an operation, to do that operation well-nigh perfectly.

This is what is done in the Laboratory of Surgical Technique, of Chicago, of which Dr. E. A. Printy is the director.

A 7-day course taken under Dr. Printy by a surgeon is of immense value, and we hear nothing but enthusiastic praise of the course by men who have taken it, and many Northwestern surgeons go to Chicago for the course.

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Endocrinology is being given increased attention by some of the best minds in the medical profession.

Disturbances of glandular relations are responsible for so many of the impractical ailments that a physician is called to treat and expected to cure—and because so many cases are relieved by the administration of glandular substances.

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Some of the glandular substances that have not been employed extensively like parotid, prostate, and orchic are now being used quite freely. Literature concerning the manufacture of the Endocrine Gland and other Organotherapeutic preparations by Armour and Company will be sent to members of the medical profession who desire it. The volume of production that is reached by Armour and Company has made them headquarters for the organotherapeutic preparations and their discussion of their properties is of considerable interest.

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is benzyl benzoate; and "Benzylets" best present the best c. p. drug—5 minims in each gelatin globule—tested, tasteless, trustworthy.

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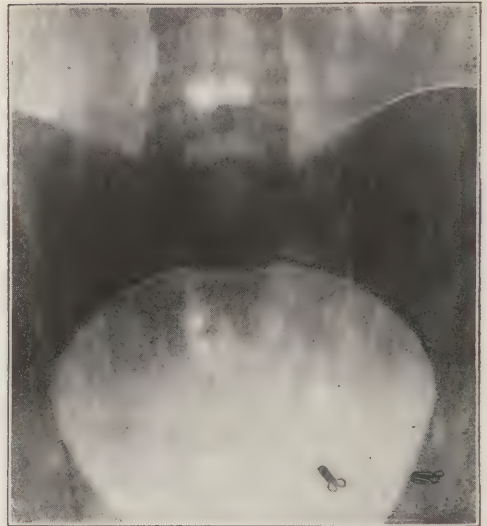
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and said she and her mother had discovered what all the doctors had failed to see; viz., a pair of scissors.”

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even large doses fail to provoke undesirable disturbances, as they do when given by mouth. The method is more scientific, for the reason that it affords opportunity for more accurate observation of the responses of physiological processes, while the results are positively more certain and uniform."

The above words are from the pen of Dr. Albert C. Geyer, a distinguished physician of New York City, and are taken from the *American Journal of Clinical Medicine* of May, 1920.

Dr. Geyer emphasizes the fact that intravenous medication is not only safe, but is less harmful than medication by mouth, which so often causes stomach disturbances that are worse than the disease treated.

Intravenous medication is well-nigh universal in present-day medicine, and it has been rendered safe by laboratory investigators, notably by the New York Intravenous Laboratory, of 110 East 23d St., New York City, whose line of intravenous preparations is large and dependable.

FREE IODINE IN INFLUENZA AND PNEUMONIA

The value of iodine in a free state as a combatant of toxins, was never more forcibly demonstrated than in the previous epidemic of influenza and pneumonia.

To increase cell and glandular activity and raise the resistance of the body, thus bringing about the elimination of urates, oxalates and chlorates, is the end to be sought. For this purpose Burnham's Soluble Iodine is the ideal product, as it can safely be given in such doses as may be necessary to accomplish this result. Its powerful stimulating action upon the cells and glands, in neutralizing and eliminating toxins, through increasing the resistance of the body, is well recognized.

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Hundreds of cases have been reported treated by this method, with prompt recovery, the respiration, pulse and temperature showing marked improvement after several doses. When sufficient dosage is given to pro-

duce the necessary anti-toxic effect, prompt and decisive benefit and speedy recovery may be expected. Write the Burnham Soluble Iodine Co., of Auburndale, Mass., for late literature.

TREATMENT OF THE PAROXYSM OF ASTHMA

The attention of our readers is invited to the brief article on "Adrenalin in Medicine" which will be found in the advertising section of our current issue. While, obviously, this space is purchased for advertising purposes by Messrs. Parke, Davis & Company, it has been put to a novel use by the publication therein of a scientific essay of unusual merit, in which a vexatious problem is discussed.

Whatever intelligence the future has in store on the pathology of asthma, the present state of our knowledge justifies the use of any dependable therapeutic measure for the relief of the acute paroxysm. Morphine is objectionable for reasons that are generally accepted. Per contra, Adrenalin does not narcotize the patient. It affords him almost instant relief, with no disagreeable sequela to mar the effect. To quote from the announcement under consideration, "Adrenalin is the best emergency remedy for the treatment of the asthmatic paroxysm at the command of the physician."

Two to ten minims of the 1:1000 solution are injected subcutaneously or into a muscle, relief usually following in a few moments. The addition of an equal amount of Pituitrin is said to prolong the effect of the Adrenalin.

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Yours fraternally,

JNO. H. MCKAY, Med. Dir.

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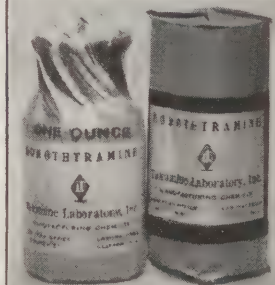
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Assure Yourself of the Best.

If your dealer cannot supply you with these superior products, write us direct. Your retailer's name will be much appreciated.



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For Chronic Gonorrhea, pyelitis and as a urinary antiseptic. Rapidly decreases discharge, eases pain and reduces urination, without stomacach and cutaneous disadvantages. Five-grain tablets, fifty in bottle.



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THE JOURNAL-LANCET

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Minnesota, North Dakota, South Dakota, and Montana
The Official Journal of the
North Dakota and South Dakota State Medical Associations

PUBLISHED TWICE A MONTH

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MINNEAPOLIS, OCTOBER 15, 1920

No. 20

DISCREPANCIES IN THE WASSERMANN REACTION*

By E. H. RUEDIGER, M. D., F. A. C. P.

From the Pathological Laboratory of the Bismarck Hospital

BISMARCK, NORTH DAKOTA

Because of the widely different methods used by different laboratories in making the Wassermann test, with the widely different results reported by different laboratories, I shall endeavor to point out some of the causes leading to such discrepancies.

METHOD

All tests were made with human serum which had been heated to about 56° C. for 30 minutes. Methods which make use of the complement present in the human serum tested receive no consideration because such specimens cannot be preserved for any length of time, hence they are not suitable for standardization. As complement serum, the serum of healthy guinea-pigs was used in quantities of 0.04, 0.02, and 0.01 c.c.

As hemolytic amboceptor the serum of rabbits immunized against washed human-blood corpuscles was used in doses of 1 unit. The term "unit" was applied to the smallest quantity of hemolytic serum which with 0.02 c.c. (0.2 c.c. of 1:10 dilution) of complement serum completely dissolved 0.2 c.c. of a 2.5 per cent suspension of washed human-blood corpuscles in one hour.

Each ingredient was so diluted that 0.2 c.c. contained the test dose; as each test-tube received five different ingredients the total quantity in each tube was 1 c.c.

Although in routine work I use only four test-tubes for each test with complement diluted 1:10 and 1:20, for each test in this work six tubes

were used, three antigen tubes designated as tubes 1, 2, and 3, and three control tubes designated as tubes 1', 2', and 3'. Each tube received 0.2 c.c. of serum mixture. Tubes 1 and 1' each received 0.2 c.c. of 1:5 dilution of complement serum, tubes 2 and 2' received 0.2 c.c. of 1:10 dilution of complement serum, and tubes 3 and 3' each received 0.2 c.c. of 1:20 dilution of complement serum. To each of the antigen tubes 0.2 c.c. of diluted antigen was added, and each control tube received 0.2 c.c. of physiologic salt solution. These mixtures were incubated; and after completion of incubation each tube received 0.4 c.c. of sensitized blood corpuscles, and the tubes were placed in the incubator at 37°C. for 1 hour, during which time they were shaken at intervals of 15 minutes. After having been in the incubator for 1 hour, the tubes were allowed to stand at room temperature, and the results were read two or three hours later.

In reading the results the hemolysis in the antigen tubes is compared with the hemolysis in the control tubes. Table A shows the method of reading and recording the results. A difference of not more than one-fourth tube is called $\frac{1}{2}$ + or \pm , as is shown by Serum A; a difference of more than one-fourth tube, but not more than one-half tube, is called 1+, as Serum B shows; a difference of more than one-half, but less than a whole tube, is called 2+, as Serum C shows; if the difference in the hemolysis is equal to one whole tube it is called 3+, as in Serum D, etc.

With diluted serum the results are read in the same manner, but the results so obtained are

*Presented at the thirty-third annual meeting of the North Dakota State Medical Association, at Minot, June 15 and 16, 1920.

multiplied by the dilution of the serum as is shown by Serums J to R inclusive.

TEST 1. *Glycerolated serum compared with non-glycerolated serum.*—Serums Nos. 1, 2, and 3 were obtained from the patients in the forenoon; in the afternoon the specimens were well centrifuged, the clear serums pipetted off, and each serum was divided into two portions, A and B. Both portions were heated to about 56° C. for thirty minutes, after which an equal volume of physiologic salt solution was added to portion A, while portion B received an equal volume of sterile glycerol. In the table these mixtures were called undiluted serum mixtures. On the following morning each portion was subjected to a complete quantitative test in dilutions of 0, 1:2, 1:4, 1:8, 1:16, and 1:32. Primary incubation was done at 1° C. for five hours; the mixtures were then warmed, the sensitized blood corpuscles were added, and the tubes were placed in the incubator at 37° C. for one hour, during which time they were shaken at intervals of fifteen minutes. After having been in the incubator for one hour they were allowed to stand at room temperature for about one hour, after which the results were read and recorded.

Table 1 shows the results obtained by comparing glycerolated with non-glycerolated serum. Of Serum No. 1 portion A gave a total of 8+, and portion B gave a total of 32+. Portion A of Serum 2 gave 2+, and portion B gave 16+. Of Serum 3 portion A gave a negative result, and portion B gave 16+.

TEST 2. *Old glycerolated serum compared with fresh glycerolated serum.*—Serums Nos. 4, 5, and 6 were mixed with equal volumes of glycerol, were subjected to quantitative tests while fresh, and were re-tested about a month later. Immediately before re-testing, each serum-glycerol mixture was reheated to 56° C. for thirty minutes. Primary incubation was at 1° C. for five hours.

The results are shown in Table 2. All of these three serum-glycerol mixtures, while fresh, fixed complement better when diluted 1:4 or 1:8 than when undiluted. After the serum-glycerol mixture was a month old the lower dilutions invariably fixed complement better than the higher dilutions, while the maximum results were frequently identical.

TEST 3. *Comparison of different complement serums.*—A standard human serum mixture was prepared by diluting with a 50 per cent solution of glycerol ten strongly positive serums so that

each diluted serum gave about 6+ when tested with a mixture of five good, fresh complement serums. The ten diluted human serums were then mixed and were used for complement titration. Twenty complement serums were titrated.

Table 3 shows that the results obtained in titrating twenty different complement serums varied greatly. One serum was without hemolytic complement; two complement serums gave 2+; four complement serums gave 3+; two complement serums gave 4+; one complement serum gave 5+; six complement serums gave 6+; two complement serums gave 8+; and two gave 10+.

TEST 4. *Different antigens compared.*—On glycerolated serums Nos. 7, 8, 9, 10, and 11 eight different antigens, alcoholic extract of human heart (AEHH), alcoholic extract of beef heart (AEBH), acetone insoluble fraction of beef heart (AIBH), alcoholic extract of dog heart (AEDH), acetone insoluble fraction of dog heart (AIDH), alcoholic extract of guinea-pig heart (AEG-PH), alcoholic extract of rabbit heart (AERH), and alcoholic extract of sheep heart (AESH) were compared. Primary incubation was at 1° C. for five hours. The tubes were warmed, sensitized blood corpuscles were added the tubes were placed in the incubator at 37° C. for one hour, after which they were allowed to stand at room temperature one hour before the results were read and recorded.

As Table 4 shows, there was great disagreement in the results obtained with different antigens. Serums Nos. 7, 8, and 9 gave negative results with antigens prepared from human heart muscle, beef heart muscle, rabbit heart muscle, and sheep heart muscle; and positive results with antigens prepared from dog heart muscle and guinea-pig heart muscle. The most careful inquiry and search failed to reveal any indications of syphilis in these patients, and these results were considered false positive results. Serums Nos. 10 and 11 came from patients who were known to be syphilitic. The syphilitic serums gave the strongest positive results with alcoholic extract of beef heart. The results with antigens prepared from dog heart and from guinea-pig heart were irregular, sometimes stronger than those obtained with antigen from human heart and sometimes weaker. Antigen prepared from sheep heart usually gave weaker positive results than did the human antigen; and the acetone insoluble antigen was always very poor as com-

TABLE A
Reading Results

Number of Serum	Dilution of Serum	Readings*						Net Results	Gross Results
		Antigen Tubes			Control Tubes				
A	O	+	+	±?	+	+	±	½ +	±
B	O	+	+	TR	+	+	±	1 +	1 +
C	O	+	+	O	+	+	±	2 +	2 +
D	O	+	±	O	+	+	±	3 +	3 +
E	O	+	TR	O	+	+	±	4 +	4 +
F	O	+	O	O	+	+	±	5 +	5 +
G	O	±	O	O	+	+	±	6 +	6 +
H	O	TR	O	O	+	+	±	8 +	8 +
I	O	O	O	O	+	+	±	10 +	10 +
J	1:5	+	+	±?	+	+	±	½ +	2½ +
K	1:5	+	+	TR	+	+	±	1 +	5 +
L	1:5	+	+	O	+	+	±	2 +	10 +
M	1:5	+	±	O	+	+	±	3 +	15 +
N	1:5	+	TR	O	+	+	±	4 +	20 +
O	1:5	+	O	O	+	+	±	5 +	25 +
P	1:5	±	O	O	+	+	±	6 +	30 +
Q	1:5	TR	O	O	+	+	±	8 +	40 +
R	1:5	O	O	O	+	+	±	10 +	50 +

*In all tables + = complete hemolysis; ± = hemolysis between 50% and 100%; TR (trace) = hemolysis up to 50%; O = no hemolysis.

TABLE 1

Glycerolated Serum "B" Compared with Non-glycerolated Serum "A"

Number of Serum	Portion of Serum	Dilution of Serum Mixture	Incubation Temperature Degrees C.	Incubation Time Hours	Readings*						Net Results	Gross Results
					Antigen Tubes			Control Tubes				
1	A	O	1	5	1	2	3	1'	2'	3'		
	A <td>1:2</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>±?</td> <td>+</td> <td>+</td> <td>±</td> <td>½ +</td> <td>±</td>	1:2	1	5	+	+	±?	+	+	±	½ +	±
	A <td>1:4</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>TR</td> <td>+</td> <td>+</td> <td>±</td> <td>1 +</td> <td>2 +</td>	1:4	1	5	+	+	TR	+	+	±	1 +	2 +
	A <td>1:8</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>TR</td> <td>+</td> <td>+</td> <td>±</td> <td>1 +</td> <td>4 +</td>	1:8	1	5	+	+	TR	+	+	±	1 +	4 +
	A <td>1:16</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>TR</td> <td>+</td> <td>+</td> <td>±</td> <td>1 +</td> <td>8 +</td>	1:16	1	5	+	+	TR	+	+	±	1 +	8 +
	A <td>1:32</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>±?</td> <td>+</td> <td>+</td> <td>±</td> <td>½ +</td> <td>8 +</td>	1:32	1	5	+	+	±?	+	+	±	½ +	8 +
	A <td>1:32</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>±</td> <td>+</td> <td>+</td> <td>±</td> <td>—</td> <td>—</td>	1:32	1	5	+	+	±	+	+	±	—	—
1	B <td>O<td>1</td><td>5</td><td>+</td><td>+</td><td>TR</td><td>+</td><td>+</td><td>±</td><td>1 +</td><td>1 +</td></td>	O <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>TR</td> <td>+</td> <td>+</td> <td>±</td> <td>1 +</td> <td>1 +</td>	1	5	+	+	TR	+	+	±	1 +	1 +
	B <td>1:2</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>O</td> <td>+</td> <td>+</td> <td>±</td> <td>2 +</td> <td>4 +</td>	1:2	1	5	+	+	O	+	+	±	2 +	4 +
	B <td>1:4</td> <td>1</td> <td>5</td> <td>+</td> <td>TR</td> <td>O</td> <td>+</td> <td>+</td> <td>±</td> <td>4 +</td> <td>16 +</td>	1:4	1	5	+	TR	O	+	+	±	4 +	16 +
	B <td>1:8</td> <td>1</td> <td>5</td> <td>+</td> <td>TR</td> <td>O</td> <td>+</td> <td>+</td> <td>±</td> <td>4 +</td> <td>32 +</td>	1:8	1	5	+	TR	O	+	+	±	4 +	32 +
	B <td>1:16</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>O</td> <td>+</td> <td>+</td> <td>±</td> <td>2 +</td> <td>32 +</td>	1:16	1	5	+	+	O	+	+	±	2 +	32 +
	B <td>1:32</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>TR</td> <td>+</td> <td>+</td> <td>±</td> <td>1 +</td> <td>32 +</td>	1:32	1	5	+	+	TR	+	+	±	1 +	32 +
2	A <td>O<td>1</td><td>5</td><td>+</td><td>+</td><td>TR</td><td>+</td><td>+</td><td>±</td><td>1 +</td><td>1 +</td></td>	O <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>TR</td> <td>+</td> <td>+</td> <td>±</td> <td>1 +</td> <td>1 +</td>	1	5	+	+	TR	+	+	±	1 +	1 +
	A <td>1:2</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>TR</td> <td>+</td> <td>+</td> <td>±</td> <td>1 +</td> <td>2 +</td>	1:2	1	5	+	+	TR	+	+	±	1 +	2 +
	A <td>1:4</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>±?</td> <td>+</td> <td>+</td> <td>±</td> <td>½ +</td> <td>2 +</td>	1:4	1	5	+	+	±?	+	+	±	½ +	2 +
	A <td>1:8</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>±</td> <td>+</td> <td>+</td> <td>±</td> <td>—</td> <td>—</td>	1:8	1	5	+	+	±	+	+	±	—	—
	A <td>1:16</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>±</td> <td>+</td> <td>+</td> <td>±</td> <td>—</td> <td>—</td>	1:16	1	5	+	+	±	+	+	±	—	—
	A <td>1:32</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>±</td> <td>+</td> <td>+</td> <td>±</td> <td>—</td> <td>—</td>	1:32	1	5	+	+	±	+	+	±	—	—
2	B <td>1:0</td> <td>1</td> <td>5</td> <td>±</td> <td>O</td> <td>O</td> <td>+</td> <td>+</td> <td>±</td> <td>6 +</td> <td>6 +</td>	1:0	1	5	±	O	O	+	+	±	6 +	6 +
	B <td>1:2</td> <td>1</td> <td>5</td> <td>+</td> <td>O</td> <td>O</td> <td>+</td> <td>+</td> <td>±</td> <td>5 +</td> <td>10 +</td>	1:2	1	5	+	O	O	+	+	±	5 +	10 +
	B <td>1:4</td> <td>1</td> <td>5</td> <td>+</td> <td>TR</td> <td>O</td> <td>+</td> <td>+</td> <td>±</td> <td>4 +</td> <td>16 +</td>	1:4	1	5	+	TR	O	+	+	±	4 +	16 +
	B <td>1:8</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>O</td> <td>+</td> <td>+</td> <td>±</td> <td>2 +</td> <td>16 +</td>	1:8	1	5	+	+	O	+	+	±	2 +	16 +
	B <td>1:16</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>TR</td> <td>+</td> <td>+</td> <td>±</td> <td>1 +</td> <td>16 +</td>	1:16	1	5	+	+	TR	+	+	±	1 +	16 +
	B <td>1:32</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>±</td> <td>+</td> <td>+</td> <td>±</td> <td>—</td> <td>—</td>	1:32	1	5	+	+	±	+	+	±	—	—
3	A <td>1:0</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>±</td> <td>+</td> <td>+</td> <td>±</td> <td>—</td> <td>—</td>	1:0	1	5	+	+	±	+	+	±	—	—
	A <td>1:2</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>±</td> <td>+</td> <td>+</td> <td>±</td> <td>—</td> <td>—</td>	1:2	1	5	+	+	±	+	+	±	—	—
	A <td>1:4</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>±</td> <td>+</td> <td>+</td> <td>±</td> <td>—</td> <td>—</td>	1:4	1	5	+	+	±	+	+	±	—	—
	A <td>1:8</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>±</td> <td>+</td> <td>+</td> <td>±</td> <td>—</td> <td>—</td>	1:8	1	5	+	+	±	+	+	±	—	—
	A <td>1:16</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>±</td> <td>+</td> <td>+</td> <td>±</td> <td>—</td> <td>—</td>	1:16	1	5	+	+	±	+	+	±	—	—
	A <td>1:32</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>±</td> <td>+</td> <td>+</td> <td>±</td> <td>—</td> <td>—</td>	1:32	1	5	+	+	±	+	+	±	—	—
3	B <td>1:0</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>TR</td> <td>+</td> <td>+</td> <td>±</td> <td>1 +</td> <td>1 +</td>	1:0	1	5	+	+	TR	+	+	±	1 +	1 +
	B <td>1:2</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>TR</td> <td>+</td> <td>+</td> <td>±</td> <td>1 +</td> <td>2 +</td>	1:2	1	5	+	+	TR	+	+	±	1 +	2 +
	B <td>1:4</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>O</td> <td>+</td> <td>+</td> <td>±</td> <td>2 +</td> <td>8 +</td>	1:4	1	5	+	+	O	+	+	±	2 +	8 +
	B <td>1:8</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>O</td> <td>+</td> <td>+</td> <td>±</td> <td>2 +</td> <td>16 +</td>	1:8	1	5	+	+	O	+	+	±	2 +	16 +
	B <td>1:16</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>TR</td> <td>+</td> <td>+</td> <td>±</td> <td>1 +</td> <td>16 +</td>	1:16	1	5	+	+	TR	+	+	±	1 +	16 +
	B <td>1:32</td> <td>1</td> <td>5</td> <td>+</td> <td>+</td> <td>±?</td> <td>+</td> <td>+</td> <td>±</td> <td>½ +</td> <td>16 +</td>	1:32	1	5	+	+	±?	+	+	±	½ +	16 +

TABLE 2
Old Glycerolated Serum Compared with Fresh Glycerolated Serum

Number of Serum	Secured	Tested	Dilution of Serum	Readings*						Net Results	Gross Results
				Antigen Tubes			Control Tubes				
				1	2	3	1'	2'	3'		
4	1/11/20	1/12/20	O	+	+	O	+	+	±	2 +	2 +
	1/11/20	1/12/20	1:2	+	±	O	+	+	±	3 +	6 +
	1/11/20	1/12/20	1:4	+	±	O	+	+	±	3 +	12 +
	1/11/20	1/12/20	1:8	+	±	O	+	+	±	3 +	24 +
	1/11/20	1/12/20	1:16	+	±	O	+	+	±	2 +	32 +
	1/11/20	1/12/20	1:32	+	+	TR	+	+	±	1 +	32 +
4	1/11/20	2/12/20	O	O	O	O	+	+	±	10 +	10 +
	1/11/20	2/12/20	1:2	TR	O	O	+	+	±	8 +	16 +
	1/11/20	2/12/20	1:4	±	O	O	+	+	±	6 +	24 +
	1/11/20	2/12/20	1:8	+	TR	O	+	+	±	4 +	32 +
	1/11/20	2/12/20	1:16	+	+	O	+	+	±	2 +	32 +
	1/11/20	2/12/20	1:32	+	+	TR	+	+	±	1 +	32 +
5	1/13/20	1/14/20	O	+	+	O	+	+	±	2 +	2 +
	1/13/20	1/14/20	1:2	+	+	O	+	+	±	2 +	4 +
	1/13/20	1/14/20	1:4	+	±	O	+	+	±	3 +	12 +
	1/13/20	1/14/20	1:8	+	±	O	+	+	±	3 +	24 +
	1/13/20	1/14/20	1:16	+	+	TR	+	+	±	1 +	16 +
	1/13/20	1/14/20	1:32	+	+	±?	+	+	±	½ +	16 +
5	1/13/20	2/13/20	O	O	O	O	+	+	±	10 +	10 +
	1/13/20	2/13/20	1:2	O	O	O	+	+	±	10 +	20 +
	1/13/20	2/13/20	1:4	O	O	O	+	+	±	10 +	40 +
	1/13/20	2/13/20	1:8	+	O	O	+	+	±	5 +	40 +
	1/13/20	2/13/20	1:16	+	+	O	+	+	±	2 +	32 +
	1/13/20	2/13/20	1:32	+	+	TR	+	+	±	1 +	32 +
6	3/18/20	3/19/20	O	+	+	±	+	+	±	—	—
	3/18/20	3/19/20	1:2	+	+	±?	+	+	±	½ +	1 +
	3/18/20	3/19/20	1:4	+	+	TR	+	+	±	1 +	4 +
	3/18/20	3/19/20	1:8	+	+	TR	+	+	±	1 +	8 +
	3/18/20	3/19/20	1:16	+	+	±?	+	+	±	½ +	8 +
	3/18/20	3/19/20	1:32	+	+	±	+	+	±	—	—
6	3/18/20	4/19/20	O	TR	O	O	+	+	±	8 +	8 +
	3/18/20	4/19/20	1:2	+	TR	O	+	+	±	4 +	8 +
	3/18/20	4/19/20	1:4	+	+	O	+	+	±	2 +	8 +
	3/18/20	4/19/20	1:8	+	+	TR	+	+	±	1 +	8 +
	3/18/20	4/19/20	1:16	+	+	±?	+	+	±	½ +	8 +
	3/18/20	4/19/20	1:32	+	+	±	+	+	±	—	—

TABLE 3
Different Complement Serums Compared

Number of Complement	Human Serum	Dilution of Amboceptor	Antigen Tubes			Readings			Control Tubes		Results
			1	2	3	1'	2'	3'			
1	Standard	1:200	+	+	O	+	+	±		2 +	
2	Standard	1:200	O	O	O	+	+	±		10 +	
3	Standard	1:200	+	O	O	+	+	+		6 +	
4	Standard	1:200	TR	O	O	+	+	±		8 +	
5	Standard	1:200	+	±	O	+	+	±		3 +	
6	Standard	1:200	+	±	O	+	+	±		3 +	
7	Standard	1:200	O	O	O	O	O	O		None	
8	Standard	1:200	+	O	O	+	+	TR		4 +	
9	Standard	1:200	+	+	O	+	+	+		3 +	
10	Standard	1:200	+	±	O	+	+	±		3 +	
11	Standard	1:200	TR	O	O	+	+	TR		6 +	
12	Standard	1:200	±	O	O	+	+	±		6 +	
13	Standard	1:200	+	O	O	+	+	+		6 +	
14	Standard	1:200	+	O	O	+	+	±		5 +	
15	Standard	1:200	+	+	O	+	+	±		2 +	
16	Standard	1:200	O	O	O	+	+	O		6 +	
17	Standard	1:200	+	±	O	+	+	+		4 +	
18	Standard	1:200	±	O	O	+	+	+		8 +	
19	Standard	1:200	±	O	O	+	+	±		6 +	
20	Standard	1:200	O	O	O	+	+	±		10 +	

pared with the plain alcoholic extract of the same tissue.

TEST 5. *Different dilutions of antigen compared.*—Dilutions of 1:25, 1:50, 1:100, 1:200 and 1:400 of alcoholic extract of human heart muscle were compared on glycerolated serums Nos. 12, 13, 14, and 15. Primary incubation was at 1° C. for five hours.

The results obtained by comparing different dilutions of antigens are shown in Table 5. Dilutions of 1:50 and 1:100 usually gave stronger positive results than did a dilution of 1:25.

TEST 6. *Old diluted antigen compared with freshly diluted antigen.*—Diluted alcoholic extract of human heart muscle was used on glycerolated Serums Nos. 16, 17, 18, 19, and 20, while fresh, six hours after having been diluted and twenty-four hours after having been diluted. Serums Nos. 16 and 17 came from syphilitic patients and Serums Nos. 18, 19, and 20 came from non-syphilitic patients. A small quantity of antigen was diluted in the afternoon and placed in the refrigerator; on the following morning another small quantity was diluted and placed in the refrigerator; in the afternoon another small quantity of antigen was diluted, and each of the five serums was tested with each of the three diluted antigens, primary incubation being at 1° C. for five hours.

Table 6 shows the results obtained by comparing old diluted antigen with freshly diluted antigen. The diluted antigen rapidly became anti-complementary. Six hours after having been diluted the antigen gave 2+ with non-syphilitic serums, and when used twenty-four hours after having been diluted it gave 10+ with non-syphilitic serums.

TEST 7. *Glycerolated human serum with primary incubation at 37° C. for one hour, at 10° C., 3° C., and 1° C. for seventeen hours.*—Each of Serums Nos. 21, 22, 23, and 24 was tested with primary incubation at 37° C. for one hour and at 10° C, 3° C, and 1° C. for seventeen hours. All of these serums came from patients who were known to be syphilitic.

The results obtained by testing glycerolated human Serums Nos. 21, 22, 23, and 24 with primary incubation at 37° C. for one hour and at 10° C, 3° C. and 1° C. for seventeen hours are seen in Table 7. Serum No. 21 gave 1+ with incubation at 37° C. for one hour, 4+ with incubation at 10° C. for seventeen hours, 6+ with incubation at 3° C. for seventeen hours, and 10+ with incubation at 1° C. for seventeen hours.

The other serums likewise gave stronger positive results when primary incubation was done at low temperature than they did when primary incubation was done at higher temperature.

TEST 8. *Non-glycerolated serum with primary incubation at 37° C. for one hour compared with glycerolated serum incubated at 1° C. for seventeen hours.*—Human Serums Nos. 25, 26, and 27 were each divided into two portions, A and B, while fresh. Both portions were heated to about 56° C. for thirty minutes. To portion A was added an equal volume of physiologic salt solution, and to portion B was added an equal volume of glycerol. Both portions were then subjected to complete quantitative tests, portion A with primary incubation at 37° C. for one hour, and portion B with primary incubation at 1° C. for seventeen hours.

The results obtained by comparing non-glycerolated serum incubated at 37° C. for one hour with glycerolated serum incubated at 1° C. for seventeen hours are shown in Table 8. Of Serum 25 portion A gave a negative result, and portion B gave 64+; portion A of Serum 26 gave a negative result, and portion B gave 96+; and of Serum 27 portion A gave 8+, and portion B gave 2,000+.

SUMMARY AND CONCLUSIONS

Glycerolated human serum gave much stronger positive results than did non-glycerolated human serum, in some cases the differences being as great as 16 to 1.

Fresh glycerolated human serums frequently fixed complement better when diluted 1:4 or 1:8 with 50 per cent solution of glycerol than when undiluted, but glycerolated human serums about a month old invariably fixed complement better when not diluted, still the total quantitative result usually remained unchanged.

Complement serums from different guinea-pigs varied greatly in fixability and in hemolytic power. Of a number of complement serums tested with the same human serum some gave 2+, some gave 3+, some gave 4+, some gave 5+, some gave 6+, some gave 8+, and others gave 10+.

The use of different antigens led to different results. Antigen prepared from dog heart or from guinea-pig heart frequently gave false positive results. Alcoholic extract of beef heart frequently gave stronger positive results than did alcoholic extract of human heart, but false positive results have not been obtained with the beef antigen. Alcoholic extract of rabbit heart

TABLE 4

Number of Serum	Kind of Antigen	Incubation Temperature Degrees C.	Incubation Time Hours	Different Antigens Compared						Results	
				Antigen Tubes			Readings*				Control Tubes
				1	2	3	1'	2'	3'		
7	AEHH	1	5	+	+	±	+	+	±	—	
	AEBH	1	5	+	+	±	+	+	±	—	
	AIBH	1	5	+	+	±	+	+	±	—	
	AEDH	1	5	+	+	O	+	+	±	2+	
	AIDH	1	5	+	+	TR	+	+	±	1+	
	AEG-PH	1	5	+	TR	O	+	+	±	4+	
	AERH	1	5	+	+	±	+	+	±	—	
	AESH	1	5	+	+	±	+	+	±	—	
8	AEHH	1	5	+	+	±	+	+	±	—	
	AEBH	1	5	+	+	±	+	+	±	—	
	AIBH	1	5	+	+	±	+	+	±	—	
	AEDH	1	5	+	O	O	+	+	±	5+	
	AIDH	1	5	+	O	O	+	+	±	5+	
	AEG-PH	1	5	+	O	O	+	+	±	5+	
	AERH	1	5	+	+	±	+	+	±	—	
	AESH	1	5	+	+	±	+	+	±	—	
9	AEHH	1	5	+	+	±	+	+	±	—	
	AEBH	1	5	+	+	±	+	+	±	—	
	AIBH	1	5	+	+	±	+	+	±	—	
	AEDH	1	5	+	+	O	+	+	±	2+	
	AIDH	1	5	+	+	TR	+	+	±	1+	
	AEG-PH	1	5	O	O	O	+	+	±	10+	
	AERH	1	5	+	+	±	+	+	±	—	
	AESH	1	5	+	+	±	+	+	±	—	
10	AEHH	1	5	+	O	O	+	+	±	5+	
	AEBH	1	5	±	O	O	+	+	±	6+	
	AIBH	1	5	+	+	±	+	+	±	—	
	AEDH	1	5	+	O	O	+	+	±	5+	
	AIDH	1	5	+	+	O	+	+	±	2+	
	AEG-PH	1	5	+	O	O	+	+	±	5+	
	AERH	1	5	+	O	O	+	+	±	5+	
	AESH	1	5	+	±	O	+	+	±	3+	
11	AEHH	1	5	±	O	O	+	+	±	6+	
	AEBH	1	5	O	O	O	+	+	±	10+	
	AIBH	1	5	+	TR	O	+	+	±	4+	
	AEDH	1	5	TR	O	O	+	+	±	8+	
	AIDH	1	5	+	±	O	+	+	±	3+	
	AEG-PH	1	5	TR	O	O	+	+	±	8+	
	AERH	1	5	TR	O	O	+	+	±	8+	
	AESH	1	5	±	O	O	+	+	±	6+	

TABLE 5

Number of Serum	Kind of Antigen	Different Dilutions of Antigen Compared.									Results
		Dilution of Antigen	Incubation Temperature Degrees C.	Incubation Time Hours	Readings*						
					Antigen Tubes			Control Tubes			
12	AEHH	1:25	1	5	1	2	3	1'	2'	3'	
		1:50	1	5	+	+	TR	+	+	±	1 +
		1:100	1	5	+	+	O	+	+	±	2 +
		1:200	1	5	+	±	O	+	+	±	3 +
		1:400	1	5	+	+	O	+	+	±	3 +
13	AEHH	1:25	1	5	+	+	O	+	+	±	2 +
		1:50	1	5	+	O	O	+	+	±	5 +
		1:100	1	5	±	O	O	+	+	±	6 +
		1:200	1	5	+	O	O	+	+	±	5 +
		1:400	1	5	+	TR	O	+	+	±	4 +
14	AEHH	1:25	1	5	+	+	O	+	+	±	2 +
		1:50	1	5	+	±	O	+	+	±	3 +
		1:100	1	5	+	±	O	+	+	±	3 +
		1:200	1	5	+	+	O	+	+	±	2 +
		1:400	1	5	+	+	TR	+	+	±	1 +
15	AEHH	1:25	1	5	+	±	O	+	+	±	3 +
		1:50	1	5	+	TR	O	+	+	±	4 +
		1:100	1	5	+	TR	O	+	+	±	4 +
		1:200	1	5	+	TR	O	+	+	±	4 +
		1:400	1	5	+	±	O	+	+	±	3 +

TABLE 6
Old Diluted Antigen Compared with Freshly Diluted Antigen

Number of Serum	Kind of Antigen	Dilution of Antigen	Age of Diluted Antigen Hours	Readings*						Results
				Antigen Tubes			Control Tubes			
16	AEHH	1:100	0	+	+	O	+	+	±	2 +
			6	+	TR	O	+	+	±	4 +
			24	O	O	O	+	+	±	10 +
17	AEHH	1:100	0	+	±	O	+	+	±	3 +
			6	+	O	O	+	+	±	5 +
			24	O	O	O	+	+	±	10 +
18	AEHH	1:100	0	+	+	±	+	+	±	—
			6	+	+	TR	+	+	±	1 +
			24	+	O	O	+	+	±	5 +
19	AEHH	1:100	0	+	+	±	+	+	±	—
			6	+	+	O	+	+	±	2 +
			24	O	O	O	+	+	±	10 +
20	AEHH	1:100	0	+	+	±	+	+	±	—
			6	+	+	O	+	+	±	2 +
			24	O	O	O	+	+	±	10 +

was about equal to alcoholic extract of human heart, while alcoholic extract of sheep heart was somewhat inferior. The acetone insoluble antigens of beef heart and of dog heart were greatly inferior to their corresponding plain alcoholic extracts, and acetone insoluble antigen of dog heart gave false positive results, as well as did the corresponding plain alcoholic extract.

Alcoholic extract of human heart muscle diluted 1:50 or 1:100 usually fixed complement better than when diluted 1:25.

Alcoholic extract of human heart muscle diluted 1:100 with physiologic salt solution rapidly became anticomplementary; diluted antigen six hours old gave 2+ with negative serum, and diluted antigen twenty-four hours old gave 10+ with negative serum.

Glycerolated syphilitic serums fixed complement better at low temperature than at high temperature. A serum which gave 1+ when incubated at 37° C. for one hour gave 4+ at 10° C. for seventeen hours, 6+ at 3° C. for seventeen hours, and 10+ at 1° C. for seventeen hours.

A human serum which, without the addition of glycerol, gave a negative result when incubated at 37° C. for one hour, gave 96+ when glycerolated and incubated at 1° C. for seventeen hours. Another human serum non-glycerolated and incubated at 37° C. for one hour gave 8+ and when glycerolated and incubated at 1° C. for seventeen hours it gave 2,000+.

Differences in the technic of performing the Wassermann test lead to great differences in the results, and the only remedy is standardization of the technic.

DISCUSSION

DR. F. I. DARROW (Fargo): I would like to ask the Doctor how the preservation of the serum is done with glycerol.

DR. RUEDIGER (replying to Dr. Darrow): Equal parts of serum and glycerol are mixed. The only growth is a few molds, and, if one is very careful, there is not even this. The molds can usually be removed by passing the mixture through fine filter-paper.

DR. H. O. ALTNOW (Mandan): Dr. Ruediger's technic gives a higher per cent of positives than that of other Wassermann workers, due to conditions that he avails himself of in his procedure. One is the glycerol dilution and the other the low temperature at which the test is performed. Of course the question of false positives must be considered, and the main question in avoiding these is the careful selection of the proper complement and antigen. With the results that Dr. Ruediger gets, the high positives, the question arises whether this technic might not be too sensitive for practical purposes. Does this give a positive reaction when syphilis extends back into the larger branches of the family tree? Or, in other words, does he get a positive Wassermann reaction whether there is an actual syphilitic lesion present in the body or not? At present we believe that the presence of a syphilitic lesion in the body usually means the presence of at least a small number of spirochetes, even in the tertiary nerve lesions. I think it is taken for granted that there must be a few spirochetes present to produce the lesions. If a positive Wassermann reaction with this method means that there is an actual syphilitic lesion present—in other words, that spirochetes are present,—there is no doubt but that this method should be adopted as the standard Wassermann technic, for it seems to be very carefully worked out and very carefully done. I had a conversation with Dr. Ruediger about a year ago and I think he made the statement at that time that, when the patient once had a positive Wassermann reaction or had syphilis, in spite of, intensive treatment he never saw, or rarely ever saw, the serum become negative. If that is the case the Wassermann test done according

TABLE 7

Glycerolated Human Serum with Incubation at 37° C. for 1 Hour and at 10° C., 3° C. and 1° C. for 17 Hours

Number of Serum	Incubation Temperature Degrees C.	Incubation Time Hours	Readings*						Results
			Antigen Tubes			Control Tubes			
			1	2	3	1'	2'	3'	
21	37	1	+	+	TR	+	+	±	1 +
	10	17	+	TR	O	+	+	±	4 +
	3	17	±	O	O	+	+	±	6 +
	1	17	O	O	O	+	+	±	10 +
22	37	1	+	+	±	+	+	±	—
	10	17	+	O	O	+	+	TR	4 +
	3	17	TR	O	O	+	+	TR	6 +
	1	17	TR	O	O	+	+	±	8 +
23	37	1	+	+	±?	+	+	±	±
	10	17	+	O	O	+	+	TR	5 +
	3	17	TR	O	O	+	+	±	8 +
	1	17	TR	O	O	+	+	±	8 +
24	37	1	+	+	±	+	+	±	—
	10	17	+	+	±?	+	+	±	±
	3	17	+	+	TR	+	+	±	1 +
	1	17	+	±	O	+	+	±	3 +

TABLE 8

Nonglycerolated Serum "A" Incubated at 37° C. for 1 Hour Compared with Glycerolated Serum "B" Incubated at 1° C. for 17 Hours

Number of Serum	Portion A—Nonglyc- erolated B— Glycero- lated A	Dilution of Serum	Incubation Tem- pera- ture Degrees C.	Incuba- tion Time Hours	Readings*						Results
					Antigen Tubes			Control Tubes			
					1	2	3	1'	2'	3'	
25	A	0	37	1	+	+	±	+	+	±	Negative
		2			+	+	±	+	+	±	Negative
		4			+	+	±	+	+	±	Negative
		8			+	+	±	+	+	±	Negative
		16			+	+	±	+	+	±	Negative
		32			+	+	±	+	+	±	Negative
		64			+	+	±	+	+	±	Negative
25	B	0	1	17	+	±	O	+	+	±	3 +
		2			±	O	O	+	+	±	6 + × 2 = 12 +
		4			O	O	O	+	+	±	10 + × 4 = 40 +
		8			TR	O	O	+	+	±	8 + × 8 = 64 +
		16			+	TR	O	+	+	±	4 + × 16 = 64 +
		32			+	+	O	+	+	±	2 + × 32 = 64 +
		64			+	+	TR	+	+	±	1 + × 64 = 64 +
26	A	0	37	1	+	+	±	+	+	±	Negative
		2			+	+	±	+	+	±	Negative
		4			+	+	±	+	+	±	Negative
		8			+	+	±	+	+	±	Negative
		16			+	+	±	+	+	±	Negative
		32			+	+	±	+	+	±	Negative
26	B	0	1	17	O	O	O	+	+	±	10 +
		2			O	O	O	+	+	±	10 + × 2 = 20 +
		4			O	O	O	+	+	±	10 + × 4 = 40 +
		8			O	O	O	+	+	±	10 + × 8 = 80 +
		16			±	O	O	+	+	±	6 + × 16 = 96 +
		32			+	±	O	+	+	±	3 + × 32 = 96 +
27	A	0	37	1	+	+	O	+	+	±	2 +
		4			+	+	O	+	+	±	2 + × 4 = 8 +
		20			+	+	±	+	+	±	Negative
		100			+	+	±	+	+	±	Negative
		500			+	+	±	+	+	±	Negative
27	B	0	1	17	O	O	O	+	+	±	10 +
		4			O	O	O	+	+	±	10 + × 4 = 40 +
		20			O	O	O	+	+	±	10 + × 20 = 200 +
		100			O	O	O	+	+	±	10 + × 100 = 1000 +
		500			+	TR	O	+	+	±	4 + × 500 = 2000 +

to this method could hardly be used as a check on syphilitic treatment, because we would be striving after something that it is absolutely impossible to obtain. It might be the same thing with its use in diagnosis—it might be too sensitive, too refined. Of course that could be avoided by having the scale of standards that Dr. Ruediger uses where his report runs all the way from 1+ up to 2,000+; everything below a certain standard could be considered as low enough positive so that no further treatment was required.

Dr. Ruediger mentioned the discrepancies of the different Wassermann reactions from the different laboratories. We have had an experience with these different results, and I will mention a few that were checked up by Dr. Ruediger's method. We had one case of syphilitic aortitis that in the laboratory at Minneapolis, under Dr. G. M. Olson, gave a 4+ positive. This same serum was sent to the State Laboratory here and gave a negative reaction. Then the blood was sent to Dr. Ruediger and he reported 125+ by his method. Another case

was one of cerebrospinal syphilis that gave a negative blood and spinal-fluid Wassermann reaction as performed by the State Laboratory, and this serum and spinal-fluid were also sent to Dr. Ruediger. He reported the spinal-fluid strongly positive and the blood serum 2,000+. Then there have been a few reports where they varied just as much: therefore it is somewhat confusing as to just what our course of procedure should be as far as the treatment of the patient is concerned.

DR. RUEDIGER (closing): So far as I know, there is no method of doing the Wassermann reaction which should have absolute control of the treatment, because all who have used the follow-up method and use the less delicate tests, find that they have relapses. Everyone knows that a negative Wassermann reaction does not mean that patients are free from syphilis. Most of the symptoms and a positive Wassermann reaction recur. Perhaps the best rule to follow is to try to keep them symptom-free otherwise, and still consider them syphilitic.

STATE SUPERVISION OF MUNICIPAL WATER SUPPLIES*

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A safe water supply is within the reach of practically any community where water is available. There was a time, not many years ago, when this statement would have been untrue; but, with information now available on the sanitation of water supplies, this statement can be made. It took considerable time for sanitary engineers to acquire this information, and many lives were sacrificed in the interim. It is needless to enumerate the many epidemics of water-borne diseases that have occurred throughout the country in the past or to aggregate the loss in life, sickness, and money. It will serve as an illustration to mention that four relatively small water-borne typhoid-fever epidemics that occurred in Minnesota between 1908 and 1914, caused 850 cases, resulting in 47 deaths, and cost the communities approximately half a million dollars. All of these epidemics, and many others, could have been prevented if the water supply in question had been properly located, constructed, and operated. The occurrence of such epidemics at the present time should be considered little less than criminal negligence on the part of those responsible for the water supply. Such water-borne epidemics are being minimized in Minnesota and in other sections of the country by proper state and local control of water supplies.

It may be of interest to know what constitutes sanitary defects in water supplies. Some of the most common errors that have been found associated with existing water supplies in Minnesota by the investigations of the Division of Sanitation of the Minnesota State Board of Health are briefly enumerated as follows:

1. The use of surface waters without treatment. All surface waters must be considered unsafe because they are subject to contamination at all times, and the protection of the catchment areas and the sanitary policing of such sources are usually impossible or impractical.

2. The use of surface waters with water-purification plants in localities where underground supplies are available and would have provided safer water. This is especially true in the case of small municipalities where a skilled personnel to operate the purification plant is seldom provided. In these instances it is usually safer to obtain water from a properly located and constructed underground source which is not subject to so many operating hazards.

3. The installation of water-purification plants by local authorities who have little or no understanding of the theoretical or practical side of the treatment, nor the difficulties attending the operation of these plants. Many such plants have been installed where the authorities believed

*Presented before the South Dakota State Medical Association, May 19 and 20, 1920.

them to be equipped with automatic devices which would insure a water of good sanitary quality. This impression is erroneous, for these plants require the most careful attention by a skilled personnel at all times during operation.

4. The installation of chlorine plants to treat water that cannot be properly purified with chlorine. Most waters require filtration in order to render them suitable for chlorine treatment; this is true of waters carrying suspended material or having a wide fluctuation in chemical constituents, particularly in organic content. It is practically impossible to disinfect the interior of suspended particles of any size in water with chlorine. Fluctuations in organic content make it necessary to change the quantity of chlorine administered on very short notice, in order properly to treat the water at all times; this necessitates the most intensive analytical control, which is frequently not available where such installations are made.

5. The addition of chlorine to raw water as it enters a filtration plant rather than to the effluent after filtration. This practice makes it very difficult to administer the chemical in proper amounts for the reasons previously stated.

6. The failure to keep on hand duplicate parts of important equipment of water-purification plants, especially the parts of chlorine apparatus that are likely to get out of repair. The lack of extra parts may make it necessary to allow untreated water to be discharged into the distribution system. This practice is exceedingly dangerous, for it is impossible to notify all consumers that polluted water has been discharged into the distribution system, to say nothing of the difficulty of thoroughly disinfecting the system after it has once been contaminated.

7. The installation of by-passes around water-purification plants by which untreated water can be admitted into the system without passing through the plant. There is always danger of such by-passes leaking or of their being used in cases of emergency without provisions for treatment, or by employes who do not appreciate the seriousness of discharging untreated water into the system.

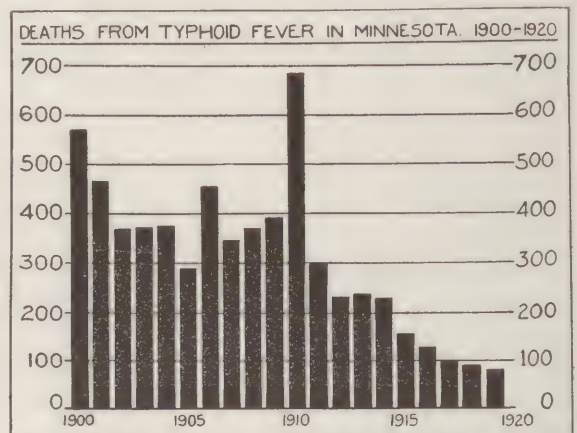
8. The improper operation of water-purification plants by unskilled or inefficient operators and without laboratory control. Water-purification plants should be in the hands of a responsible, skilled operator who is provided with adequate laboratory facilities by which he can keep a proper check on the plant.

9. The location of wells, pumping equipment, exposed mains, reservoirs, filters, etc., where they are subject to flooding with surface waters.

10. The improper construction of well casings and covers, and the lack of adequate provision for surface drainage to prevent pollution of the well with surface waters.

11. The construction of pits around wells at the surface in which all or part of the pumping equipment is located; this applies especially to drilled wells. It is difficult to prevent surface and waste waters from collecting in such pits from which it may gain access to the well.

12. The connection of any part of the water supply system with sewers or drains which would make it possible for sewage or surface water to back up into the wells, well pits, storage reservoirs, etc.



13. The improper construction of underground and surface reservoirs; this includes structures that are not water-tight, those where the covers admit surface waters, and those where the cleanouts are connected with sewers or bodies of polluted water the surface of which may be raised to an elevation higher than the bottom of the reservoir.

14. The installation of emergency connections which may permit untreated surface water or water of unknown or questionable quality to be admitted to the system. There should be a complete physical separation between water supplies that are safe and those that are known to be unsafe from a sanitary point of view.

The foregoing are some of the errors which can be prevented in new installations, and corrected in existing installations, if proper supervision is provided by the State for the assistance of local communities. This has been demon-

strated in Minnesota by the State Board of Health in its work in co-operation with local authorities.

The accompanying chart shows the deaths from typhoid fever in Minnesota from 1900 to 1920. The average typhoid death-rate per year from 1900 to 1910, inclusive, was 428; the minimum death-rate during this period was 294 and the maximum rate 688. It is estimated that in 1910 there were nearly 14,000 cases. Studies by the Division of Preventable Diseases of the State Board of Health have shown that the greater part of the typhoid during this period was water-borne. About 1910 it became possible for the State Board of Health to undertake more active work on the water supply control, and this activity has been carried on up to the present time. The result of this water supply control work which has been undertaken in co-operation with local authorities throughout the state is shown by the marked decrease in the typhoid fever death-rate from 1910 to 1920. During the year 1919 only 82 deaths were reported, or a reduction of 346 when compared with the yearly average number of deaths from 1900 to 1910. There is an average of over 20 cases of typhoid fever for every death; therefore, if the death-rate for 1919 was reduced 346 deaths, the number of cases which would have occurred would have been 6,920. If it is assumed that a very conservative figure for the cost to the patient of having typhoid fever is \$150, covering loss of time, doctors' and nurses' fees, hospital bills, medicine, etc., the amount of money which has been saved in the state of Minnesota in one year is \$1,380,000, to say nothing of the 350 lives which were saved at the same time. It has been demonstrated that for every 100 cases of typhoid fever, 3 to 5 persons become carriers and continue to discharge virulent typhoid organisms for months and even years after their illness. These persons, unless they exercise great care, are very dangerous to their associates and to the public. With the reduction of approximately 7,000 cases in 1919, when compared to the 1900-1910 period, there should be a corresponding reduction of between 200 and 350 in the number of carriers. Control of carriers is, of course, an epidemiological rather than a sanitary problem.

The results which have just been presented

illustrate what can be accomplished by concerted effort of state health authorities in co-operation with local communities. Such a low death-rate from typhoid fever cannot be maintained or improved without a strenuous effort on the part of all concerned. Investigations of the Division of Sanitation of the State Board of Health have shown that there are a considerable number of water supplies in the state that are still as unsafe as those that have already caused epidemics, but each supply that is made safe minimizes the hazard. The dangers from water-borne diseases can be practically eliminated in any state by proper state and local control of the water supplies. In order to accomplish this the state health authorities should be given adequate legal power to supervise the water supplies throughout the state, and should be organized with a subdivision provided with engineering and laboratory facilities to carry on these duties efficiently. Such a subdivision is usually organized to handle all branches of sanitary work, including water supplies, milk supplies, sewage disposal, refuse disposal, sanitation of buildings, etc. The water supply work of such a subdivision would include (1) investigations of existing water supplies, and, in the case of all unsatisfactory supplies, recommendations should be offered for correcting defects or for the abandonment of the supply; (2) the investigation of all proposed supplies, and the examination and approval of plans and specifications of these installations to prevent errors in construction of new supplies; (3) the maintenance of emergency water-disinfection plants and portable laboratories in readiness for immediate transportation to places where water supplies have become contaminated; and (4) the preparation and distribution of information on the subject of water supplies that may be of service to municipalities or citizens throughout the state. Provision should be made to follow up systematically all recommendations and executive orders issued on water supplies, otherwise satisfactory results will not be obtained. All of these activities must be carried on in close co-operation with local authorities so that they may understand the purpose of the work and be able to assist in carrying out the provisions necessary to safeguard each water supply.

THE DIAGNOSIS OF GASTRIC CARCINOMA, WITH SPECIAL REFERENCE TO THE RÖNTGENOLOGY*

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It has been estimated that from 33 to 50 per cent of all carcinomas are in the stomach. In a recent statistical compilation it was shown that of 23,598 patients admitted to the Mayo Clinic between July 1, 1918, and January 1, 1919, 169 (0.71 per cent) had cancer of the stomach. In other words, one in every 140 patients with a multiplicity of complaints had gastric cancer.

I shall review briefly the older methods of diagnosis before the *x*-ray came into prominence as a diagnostic measure, as a means of estimating the aid to be obtained from its use. If a patient at or past middle life presents himself for examination with symptoms of dyspepsia of from a few months' to a year's duration, persistent, without remissions, and not amenable to medicinal or dietetic treatment, with pain at variable lengths of time after meals, loss of appetite, vomiting of blood or grumous material, a gradual loss in weight and strength, and a cachectic appearance, we may be reasonably sure of gastric cancer. If, in addition, a mass can be palpated in the epigastrium, and the gastric analysis shows obstruction with food remnants, our reasonable surety would amount to certainty. If, however, each one of these symptoms is analyzed, the syndrome of which makes up a diagnosis of gastric cancer, it will be found that each is associated with so many other conditions that it has no separate value. For example, flatulence, hyperacidity, eructations, a sense of fulness in the epigastrium, and anorexia, the combination of which is commonly called "dyspepsia" by the patient, may be found in a neurotic person with a normal stomach or the symptoms may be reflex from disease of the gall-bladder or appendix. Pain may be found in gastric ulcer, duodenal ulcer, angina pectoris, gall-bladder or pancreatic disease. Vomiting is commonly found in neurotics and in patients with appendiceal or gall-bladder disease, or diseases of the central nervous system. Hematemesis, on which much reliance has been placed in the past, is found in many conditions other than gastric cancer; it must be distinguished from hemorrhage from other parts of the alimentary canal or from the lungs. It should be recalled that, aside from the

strictly intrinsic gastric lesions that cause hemorrhage,—namely, ulcer, cancer, tuberculosis, syphilis, benign tumor, and varices,—there is a group of diseases or conditions which may be extrinsic and not directly associated with the stomach, but act reflexly or directly on it in the causation of hematemesis. Some of these may be enumerated as follows: (1) recognizable changes in the liver or spleen, such as hepatic cirrhosis or splenic anemia; (2) a septic focus elsewhere, such as a chronic appendicitis or gall-bladder disease causing gastric hemorrhage; (3) general constitutional diseases, such as leukemia, hemophilia, pernicious anemia, chronic nephritis, and uremia; (4) acute infectious diseases, such as yellow fever or typhoid fever; (5) multiple hemorrhagic or follicular erosions; and (6) foreign bodies. In this group of diseases the hematemesis, however, is more likely to be unaltered and unmixed with food; whereas in cancer it is more likely to be grumous and mixed with gastric contents.

In a statistical and laboratory study Eusterman found occult blood in the gastric contents in 75 per cent of cases of gastric cancer, in 17 per cent of duodenal ulcer, and in 28 per cent of gastric ulcer. In 500 patients with gall-bladder disease 228 had sufficient gastric symptoms to warrant a gastric analysis, and in these 43 per cent (19.6 per cent of the total) showed occult blood in the stomach washings. Of 500 patients with appendicitis 110 had gastric analyses, of which 24 per cent (5.4 per cent of the total) showed occult blood. The percentage of frank and hidden hemorrhages from the stomach due to outside causes is therefore large; it has been estimated as high as 50 per cent. The positive reaction in a small percentage of these cases may have been due to trauma, for a large tube was used. These statistics, however, have been corroborated by other workers.

While the bleeding in cancer may occur from erosion of a large vessel and be copious and even fatal, it usually consists of oozing from the degenerated tumor. This accounts for the comparatively small percentage of frank hematemesis in cancer, and makes the persistence of occult blood in the stool, in which it is found in from 70 to 90 per cent, of far greater diagnostic value.

*Presented before the Medical Association of Montana, Helena, Montana, July, 1920.

Even if it might be assumed that hematemesis is of pathognomonic importance in the diagnosis of gastric cancer we should still be confronted with the fact that it occurs in this condition only in about 50 per cent of the cases. Even cachexia is not pathognomonic, for it must be distinguished from pernicious anemia and from malignancy elsewhere.

While, therefore, single symptoms may be suggestive of gastric cancer they are not pathognomonic, and it is only the syndrome, including a palpable mass, which determines with a high degree of certainty that cancer is being dealt with. Unfortunately, at this time it is too late to cure the disease. Furthermore, the records of the Mayo Clinic show that in a large series of patients with gastric cancer confirmed by operation 33 per cent had no palpable tumor, and 46.7 per cent had no food remnants to indicate obstruction.

How then shall it be determined that a patient with history and symptomatology suggestive of a lesion in the stomach has or has not (for the negative finding has almost as great importance as the positive) a gastric cancer? There is but one way, aside from exploratory laparotomy, namely, a thorough röntgenologic examination by a specialist capable of interpreting findings.

Of 169 cases diagnosed cancer of the stomach by the Röntgen ray at the Mayo Clinic, operation was performed in 74; in 73 the diagnosis was confirmed, making a percentage of correct positive diagnoses of 98.64. In 361 cases diagnosed "negative stomach" 336 were confirmed at operation performed for other conditions, making a correct negative diagnosis of 96.7 per cent. The positive diagnoses in this series have greater value than the negative, for the stomach complaint was of secondary importance in a larger proportion of patients in whom the diagnosis was negative than in those in whom it was positive. These statistics show the great possibilities of Röntgen diagnosis, but in their excellence lies the danger. To attain such results presupposes long experience and a thorough correlation of surgical and Röntgen findings.

The analysis of the gastric contents should not be neglected. In the incipient stages the presence of blood and low free-acid values are always significant; and later, when there is obstruction, lactic acid, sarcinae, and Oppler-Boas bacilli are uniformly noted. The marked reduction or absence of free hydrochloric acid, although it may occur in general disorders, should make one suspicious

of cancer. On the other hand, free acid may be present in about 44 per cent of cancer cases, usually in reduced amount (16 to 20 per cent).

The motor bismuth meal, on the whole, gives more exact information of the presence and degree of obstruction than the motor food meal.

There is no symptom which definitely demands a röntgenologic examination. In general a patient, especially of middle age or past, should have the benefit of a röntgenologic examination if he has had for several months a stomach complaint not amenable to dietary or general hygienic measures, especially if pain, vomiting, and loss of weight and strength are associated, even if the symptoms are not marked, and the patient is believed to be neurotic. The technic of examination is as follows:

The evening before examination the patient is instructed to eat a large dinner, including meat, and at 8 p. m. to eat from ten to fifteen seedless raisins. At 7 a. m. without breakfast he reports at the gastric laboratory where he is given a test breakfast of from six to eight arrowroot biscuits and two glasses of water. This is partially withdrawn after forty-five minutes and tested for percentages of free and total acidity. At the end of an hour the entire meal is withdrawn and another test made. Food remnants of the previous evening's meal are especially watched for and noted.

The patient then reports to the *x*-ray laboratory where he is given a motor meal consisting of 2 ounces of well-cooked wheat breakfast food, in which have been stirred 2 ounces of barium sulfate. To this may be added a little fat-free milk, and sugar to taste. No food is taken for six hours, when the patient reports to the screen-room. There he is stripped to the waist, and after a preliminary survey of the chest to observe any abnormality of heart, lungs, or spine, and of the abdomen to observe the position of the head of the motor meal, and especially any retention of barium in the stomach, he is given a freshly stirred mixture of 8 ounces of water, 4 ounces of barium sulfate, and a dram of sodium bicarbonate flavored with a little syrup of raspberry juice. When the stomach is filled it is inspected, and its general form, contour, size, position, mobility, flexibility, and peristalsis are noted, the patient being rotated into different angles of view, and palpatory manipulation used as necessary. Plates are made immediately after the screen examination is completed.

If, at the time of the preliminary survey of the

abdomen with the screen, a retention of barium is found in the stomach a pathologic condition may be strongly suspected, for in about 95 per cent of the cases retention is found to be due to a lesion, a sequence of cancer or gastric or duodenal ulcer. In about 5 per cent there is a small amount of retention due to functional disturbance in neurotic persons or following headache, nausea, an opiate, or some worry or other upset which has interfered with the passage of the motor meal into the duodenum. Approximately 70 per cent of cancers of the stomach occur in the pyloric portion, of which about 60 per cent cause retention.

The röntgenologic signs of gastric cancer are either primary, direct, or secondary, indirect.

The primary cardinal röntgenologic sign of gastric cancer is a filling defect. If a filling defect is found to be constant in several examinations in any part of the stomach, and does not change in location or outline after palpatory manipulation or the administration of antispasmodics to physiologic effect, especially if the filling defect coincides with a palpable mass, it may be reasonably assumed that the tumor is in the stomach, and probably is cancer since 95 per cent of all tumors of the stomach are malignant.

The filling defect of gastric cancer must be distinguished from actual filling defects due to benign tumors, sarcoma, linitis plastica, syphilis, tuberculosis, and apparent filling defects due to food remnants, secretion in the stomach, gas or fecal matter in the colon, pressure of the stomach against the spine, pressure of a deformed costal arch, strong retraction of the upper abdominal wall, spasm, use of faulty mediums, hair-balls, extrinsic tumors, adhesions from perigastric inflammation, and displacement and distortion of the stomach by ascites, pregnancy, and so forth.

The most common benign tumors of the stomach are myomas, fibromas, adenopapillomas, and lymphadenomas; since they may give the same picture most of these usually can not be definitely distinguished from gastric malignancy by the x -ray alone. The clinical history, however, is often suggestive, and the benign tumors are comparatively rare.

Sarcoma and linitis plastica are usually impossible of differentiation, and their diagnosis depends on the history and often on exploratory laparotomy. Syphilis may sometimes be differentiated; the röntgenologic picture is practically identical with that of cancer. The helpful points are clinical rather than röntgeno-

logic; they are the absence of a palpable mass, the relative infrequency of retention of the six-hour motor meal (20 per cent as contrasted with 60 per cent in carcinoma), the general well-being of the patient considered with the extent of the lesion, and the comparative youth of the patient, who often is under cancer age. The final diagnosis, however, devolves on the clinician, who is helped in his conclusions by the blood and spinal-fluid Wassermann reactions, and the evidence of syphilis elsewhere if these are negative by the provocative Wassermann test, and finally by the therapeutic test.

The apparent filling defects due to food remnants are common, and can be ruled out by palpatory manipulation, which will cause the filling defect to change its position or disappear. In case of doubt a second examination should be made when the stomach is known to be empty. Secretion in the stomach often shows as a clear area above the opaque barium. It has, however, a straight line of demarcation, and by manipulation the barium can be pushed through it, thus showing its artificial nature. Gas or fecal matter in the colon, pressure of a deformed costal arch, strong retraction of the upper abdominal wall, and pressure of the stomach against either a normal or lordotic spine, may all simulate filling defects, but can be ruled out by encouraging the patient to relax the abdominal wall, by palpatory manipulation, by change of position, and often by the presence of normal rugæ of the stomach coursing through the apparent filling defect.

Faulty mediums, especially when too stiff or poorly mixed with lumps of barium, may cause pseudofilling defects, but can be interpreted as such readily by manipulation of the stomach. Spasm of the gastric musculature may be very deceptive in its imitation of the filling defect produced by gastric cancer. It is, however, migratory or transient, is frequently sharp in outline, and is not associated with a palpable mass. It may disappear by distracting the attention of the patient or may be absent at a second examination. If it then cannot be definitely ruled out, antispasmodics (usually belladonna) to physiologic effect are given, followed by re-examination. This may be conclusive, although in exceedingly rare instances a spasm may persist in spite of this measure.

The filling defects produced by extrinsic tumors are usually smoothly rounded, the inequalities of the tumor being smoothed out by the over-

lying gastric wall. If the tumors are not adherent to the gastric wall their filling defects may be distinguished from intrinsic filling defects by palpatory manipulation.

Rarely, adhesions from perigastric inflammations may simulate the filling defects of cancer. These originate most often from perforating gastric or duodenal ulcer, and can be recognized by the presence of an accessory pocket, a niche, an incisura, or a deformed bulb, and the absence of a palpable tumor.

Ascites, pregnancy, or large abdominal tumors are ordinarily easily eliminated clinically. Hair-ball, which is extremely rare, is found only in highly neurotic or insane persons, and can be ruled out by palpatory manipulation by pushing the hair-ball away from the barium and thus obtaining the faint, irregular outline of the shadow due directly to the mass of hair.

The secondary or indirect röntgenologic signs of gastric cancer are associated with altered function, such as (1) gaping or obstruction of the pylorus, and (2) increased, decreased, or reverse peristalsis, and with altered physical conditions, such as (1) lessened flexibility, (2) lessened mobility, (3) increase or decrease in size, (4) persistent local spasms, and (5) displacement of the stomach. The most important of these are decreased peristalsis and lessened flexibility. While usually these signs are associated with a filling defect, in one type of cancer, the diffuse infiltrating type, the filling defect may be absent, and the diagnosis rest on the presence of these indirect signs alone. Lessened flexibility is demonstrated by palpating with the tips of the fingers; the normal stomach bends over the palpating fingers, whereas the infiltrated stomach moves away from it en masse.

The presence of any of the secondary röntgenologic signs should suggest the possibility of cancer; and, if a filling defect is not apparent at first sight, further search should be made.

In making a diagnosis of cancer the röntgenologist, since he has the advantage of actually seeing the extent of the disease process, is expected also to give an opinion as to the operability of the lesion. For this purpose the stomach

may be divided into three areas, namely: the pars cardiaca, the upper third; the pars media, the middle third; and the pars pylorica, the lower third. Cancers in the pars cardiaci are inoperable because they are inaccessible, those in the pars media are questionable, and those in the pars pylorica are usually operable. Of course other factors must be taken into consideration, namely, the skill of the surgeon, the character of the tumor (those of the so-called medullary type are more apt to be well defined in contour, while those of the so-called scirrhus type are more infiltrating and more apt to extend further than the röntgenologic examination indicates), the fixation or nonfixation of the stomach to surrounding structures, and the question of metastasis, which may or may not be definitely decided by the Röntgen ray.

I do not wish to be understood as intimating that the röntgenologic examination should supersede the clinical examination, because in general there is too much of a tendency today to depend on laboratory methods—the “mechanical age” in diagnosis seems to have been reached, but notwithstanding this, I believe that the Röntgen ray plays a highly important part in the diagnosis of gastric carcinoma.

CONCLUSIONS

1. Since from 33 to 50 per cent of all cancers occur in the stomach and since cure depends on radical extirpation, an early diagnosis is essential.

2. Early cancer can be diagnosed with greater certainty by the Röntgen ray than by any other single or combined measures.

3. While röntgenologic examination should be made, if possible, by an experienced specialist, this is not always practicable; but the novice, if he is conservative, uses common sense, and limits his positive diagnoses to those cases in which he finds a permanent filling defect and which are at least suspicious clinically, may attain a fair degree of success.

4. No patient should be sent to the operating-table with a diagnosis of gastric carcinoma who has not had a thorough röntgenographic and röntgenoscopic examination.

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HEARD ON THE TRAIN

Coming in from a distant part of the country on the railroad train one becomes weary of sitting, and his tendency is to walk about the train, not only to the dining-car but to other places. The medical man who tells us his story says that he wandered into the smoking compartment of the parlor car (and, by the way, incidentally and confidentially, parlor-car rates have increased 100 per cent; bear this in mind), and when he sat down he heard two men in conversation,—one an elderly, dapper gentleman, looking like an aristocrat of the old school, with his face covered with whiskers neatly trimmed and as neatly parted; the other smooth-faced, young, and vociferous. Sitting there he could not help overhearing their conversation. They were discussing doctors, and what they said about doctors was about the last word. They criticised them from A to Israel, or, more properly said, from Dan to Beersheba. They told of negligence, carelessness, and the commercial iniquity of the profession, and both told it well,—at least, they were quite satisfied with their own conversation, while the medical man simply absorbed what he heard without making comment, because he knew that, if he commented or discussed various criticisms offered, he might be thrown bodily from the train. Then he felt, too, that a good part of their criticism was just, for they talked of the indifference of doctors in their examinations of patients, their careless and flippant

way, the incongruity of their conclusions, their inability to make a diagnosis, and very often the error in diagnosis which had come under their own personal observation. For instance, the young man talked about his brother-in-law's child, who had a sore throat, similar to that which was afterward seen in the mother's throat; the doctor simply came in and looked at the throat and then went out of the house, making no diagnosis. He did not even make a throat culture. He did not come back for three or four days, and then to his horror he discovered that both mother and child had diphtheria. Then the nice old gentleman of aristocratic mold told of his experience in a Western city during the influenza epidemic—how he was forced to wear an "influenza" mask, much to his disgust (probably because it interfered with his whiskers). And then, too, he heard that there were a great many doctors in this Western town who were injecting serum into people to prevent influenza and pneumonia, and charging from ten to twenty dollars, every forty-eight hours. That struck him as a little high-priced for a common ordinary influenza. Fortunately, he met a medical friend to whom he told his troubles, and the medical man said, "Do you want to be vaccinated? I quite agree with you that the charges of these other men are exorbitant, and if you really want to be vaccinated I will vaccinate you for fifty cents because I am not sure that the vaccine will prevent influenza." So the nice old gentleman of the old school was satisfied, and he appreciated the ridiculously small charge his medical friend had made.

Then they drifted into the subject of incomes of doctors, and the nice old gentleman pounded his chair with his hand and said that he knew a man, a specialist in Minneapolis, who made a hundred thousand dollars in five years. He said it was outrageous, and no doctor had any business making such a large amount of money. He did not comment on the fact that it probably cost the doctor from twelve to fifteen thousand dollars a year to run his office, for which he paid a high rental and where he employed assistants and nurses to carry on the work. All that the old gentleman of the old school did not consider, neither did he consider the expense the doctor had gone to in acquiring his education, nor the hard, grinding experience whereby he gained his reputation as a skillful surgeon.

One may safely presume that when two or three are gathered together for conversation they inevitably bring up doctors for criticism. And it

is assumed, without fear of contradiction, that the doctor is more thoroughly damned for his work or his lack of skill, or even for great skill, than any other professional man living. He is damned for his morals, he is damned for his skill, he is damned for his charges,—but in the end he does not “give a damn.” However, it is just as well that the medical profession should wake up to the fact that they are criticised, no matter how righteous and “holier-than-thou” they may be. The only man who is really responsible for attacks made upon himself is himself, but, somehow, we hear of men who we know are absolutely true and noble and unerring in their work, yet they are criticised the same as the man who attempts all sorts of experiments, who cheapens himself by all manner of things, and who is known to be either incompetent or immoral.

THE MINNESOTA STATE MEDICAL ASSOCIATION

The fifty-second annual meeting of the Minnesota State Medical Association was held in St. Paul on September twenty-ninth and thirtieth and October first. A larger number of physicians registered than at any previous meeting, so that it started with marked activity, but it wound up with a scanty attendance on Friday afternoon. It is evident that the average medical man can stand about a day and a half of medical meetings; then his brain seeks the relaxation of the corridors, where he can exchange his sociability with some other man, or can listen to the topical stories of the day. This, in a measure, relieves his brain fag, which he has had to endure throughout the program.

The program, as presented by the Program Committee, was a very voluminous one, and altogether too top-heavy for so short a meeting, and it was impossible to get all the papers in under the specified dates. However, the subject matter was, as usual, inspiring and uplifting. Much information was disseminated by the papers and by the men who discussed them, consequently, from the program point of view, the meeting was a very successful one.

The Medical Section occupied the entire forenoon on Thursday and again on Friday. The Surgical Section occupied a similar time, but it met in a different part of the Masonic Temple. The medical problems were varied, and were those which the average practitioner meets. The first part of the program dealt with chil-

dren's diseases. The third and fourth numbers occupied the time with a discussion of “Acute Lymphatic Leukemia,” and “Polycythemia Vera.” Then followed a paper on “An Attempt to Unify and Harmonize Points of View of the Medical and Dental Professions toward the Constitutional Influence of Dental Pathology,” promoting a study of the present tendency toward the wholesale extraction of teeth, the lack of interest of the average medical man in dental problems, and the difficulties encountered by the dentist in borderline conditions which are influenced by environment, diet, and habits. The subject of physicians was brought to the foreground again in a good paper entitled “The Use and Abuse of Vaccines,” which was discussed by the leading men who stand behind the vaccine theory. Then came a discussion of neuropsychiatric problems, and a symposium on the early diagnosis and treatment of pulmonary tuberculosis, from various points of view.

Surgeons still occupy the major part of such programs, and also attract the larger audiences. The Surgical Section was opened with a discussion by Dr. C. H. Mayo, of Rochester. This was followed by a discussion of the toxicity of previously simple goiters, and closely allied to it was a paper on “The Repair of Hare-Lip and Cleft-Palate Deformity.” Three surgeons discoursed on the methods of meeting the problem by local anesthesia, together with the technic of administration. The latter subject is rapidly coming to the front as a topic for serious consideration by the surgeon and the physician. Next came the specialist and his work on glands, including surgery, mastoid operations, and the different methods of operating for goiter, followed by the oculists, who presented papers in their special departments.

On the afternoon of September thirtieth both the Medicine and Surgery Sections met in a joint meeting to listen to the guest of the Association, Dr. Joseph A. Blake, of New York—the man who founded the Blake Hospital in Paris and who did so much during the war period. (Dr. Blake also delivered an address before the Minnesota Pathological Society on Tuesday evening, Sept. 28.) The joint session was also addressed by Dr. Joseph L. Miller, of Chicago, who spoke on “Some of the Problems in Internal Medicine” and by Dr. Harvey R. Gaylord, of Buffalo, on “Cancel Control.”

The afternoon session of October first, which was supposed to be a joint meeting, was poorly attended—a very unfortunate part of the pro-

gram because the President, Dr. John H. Adair, of Owatonna, spoke on "Some Medical Traits and Their Consequences," and it was a paper which every member of the Association should have heard. He outlined the various phases of medicine as practiced many years ago, and arrived at the conclusion that there is very little difference between the practices of a century ago and those of today; that we are all bound by tradition and impulse, and do not round out our course by thinking accurately on what we should do. Dr. Adair touched, too, upon the changes which are quite evident in the various medical fields of today, and the tendency toward paternalism in medicine; and he suggested that it will not be long before the Government may commandeer the medical profession. If it does (these last are not Dr. Adair's words), the group medical men, the so-called "diagnostic clinic" formations, will probably be the first to attract the attention of the Government, as they are more or less organized for their work. This is as it should be, perhaps. These organizations are equipped with men, methods, and apparatus; and why should they not give their services for the relief of those who are suffering from a lack of organization in the medical profession? Dr. Adair has a very scholarly and convincing method of presenting his views, and his opinions are the outcome of his long practice and keen observation in a general field of medicine; consequently, he is able to speak in a convincing manner, and the younger men of the profession may well take note of his words.

Following Dr. Adair's address, Dr. Frederick L. Hoffman, of Newark, N. J., spoke on "Compulsory Health Insurance and the Medical Profession." He said such insurance is coming, and no one can stop it. This problem is under general discussion, and this solution of it will not be accepted until it is here.

Following the essayists and lecturers came the report of the House of Delegates. First, was the election of officers, the result of which is given in our news columns.

The reader will note that Dr. Earl Hare has retired from the secretaryship, and is succeeded by Dr. Carl Drake, of St. Paul, the editor of *Minnesota Medicine*. Dr. Hare reported on the success of *Minnesota Medicine*, and described it in eulogistic terms, both its cover and interior departments. He wound up his report by saying that apparently they had come out with a surplus of two hundred dollars, but owing to the high cost of printing, paper, and other items

there was a deficit of seven hundred dollars, and because of this deficit the House of Delegates felt obliged to order an increase in dues amounting to two dollars, to cover the expenses of the journal. This increase will affect every member of the Association, as the annual dues now become five dollars per year. This increase is to be expected, for everything has increased in cost, and the *necessities* of life must be provided for.

The most interesting feature of the meeting, or incidental to it, was the luncheon of the alumni of the Medical School. At this meeting there were exhibited great acrimony, bitterness and loss of dignity. There was a general discussion that was a joy and treat to the listener, especially if he loved a fight, for evidently there was a fight. It all centered about the introduction of resolutions, fathered by Dr. George Douglas Head and his committee in regard to some of the conditions at the University. (These resolutions were ordered printed in *Minnesota Medicine*, and will doubtless appear later, and THE JOURNAL-LANCET hopes to print them simultaneously.) The lie was passed back and forth with a good deal of freedom. The defense and the prosecution were very much in evidence, and the impression left on the majority of the members of the Alumni Association was a very unfortunate one. While they should be working in harmony, they were evidently working from different points of view, and only after reading or hearing the differences of opinion can one judge upon whom the blame shall fall. At all events, it was an outspoken, plainly worded effort to improve the medical situation at the university as it exists today. Perhaps it will clarify the atmosphere, or at least blot out the flame that has been smoldering for two or three years; and if that is properly stamped out now there ought to be a better feeling between the medical centers of Minnesota, but the denial or the suppression of the truth will not accomplish this end.

NEWS ITEMS

Dr. J. L. Storken has located at Malta, Mont.

Dr. R. V. Overton has moved from Dixon, S. D., to Sioux Falls, S. D.

Dr. J. H. P. Gauss, of the Mayo Clinic staff, has moved to San Jose, Calif.

Dr. H. A. Engh, of Moorhead, Minn., has become a member of the Watertown (S. D.) Clinic.

Dr. J. A. Roy has purchased the practice of Dr. J. P. Guilfoyle, of Stephen.

The membership fee in the Minnesota State Medical Association is now \$5.00.

Dr. W. B. Mowatt has moved from Wolf Point, Mont., to Los Angeles, Calif.

Dr. C. J. Glaspel, of Grafton, N. D., has been doing postgraduate work in Chicago.

Dr. A. V. Denman, of Mankato, has been doing postgraduate work in New York City.

Dr. E. W. Johnson, of Bemidji, has been doing postgraduate work in New York and Chicago.

Dr. Stewart H. Anderson, of Wells, was married last month to Miss Evelyn Thompson, of St. Paul.

Dr. A. W. Graham, school physician of Hibbing, has been doing postgraduate work in New York.

Dr. Archie L. Gleason, of Great Falls, Mont., was married last month to Miss Solveigh Moe, of St. Paul.

Dr. M. O. Opegard has moved from Minneapolis to Crookston, where he joins a new clinic just organized.

Dr. Joseph D. Lewis, of Minneapolis, was married last month to Mrs. Juliette Pouliot, also of Minneapolis.

Dr. Charles K. Holmes, of Minneapolis, was married last month to Miss Mabel J. McCabe, also of Minneapolis.

Dr. Alexander Archibald, of the Mayo Clinic staff, has gone to Glasgow, Scotland, where he will live permanently.

Dr. L. M. Roberts, of Little Falls, has been re-elected president of the Morrison County Public Health Association.

Dr. A. N. Smith has resigned from the staff of the Minneapolis General Hospital, and will take up general practice.

Dr. Louis R. Koller, of Minneapolis, was married on the 5th inst. to Miss Esther M. Bauman, also of Minneapolis.

Dr. Dalton G. Paxam, a recent graduate of Johns Hopkins, has been assisting Dr. W. F. Sihler, of Devils Lake, N. D.

Dr. A. J. Clay, of Bowden, N. D., has gone to Fargo to become associated with Drs. McGregor & Hanna, in the Fargo Clinic.

Dr. Gilbert Kvitrud has become director of the laboratories of the Mounds Park and the Midway General Hospital of St. Paul.

Dr. H. J. G. Koobs has moved from Scotland, S. D., to Mitchell, S. D. Dr. Koobs' practice is limited to the eye, ear, nose and throat.

Antituberculosis workers in the schools of North Dakota assert that 85 per cent of the children in the state need medical attention.

Dr. I. Geo. Wilttrout, of Rushford, has decided to locate in Oslo, where a physician has been long needed and where the field is very large.

Dr. A. C. McGee, who has been physician for the Indian schools at Walker for the past two years, has resumed his practice at Deer River.

At the annual meeting of American Association of Orificial Surgeons, held in Chicago last week, Dr. G. Schmidt, of Lake City, was elected secretary.

Dr. R. G. Olson, who practiced for some time at Nicollet and has been taking a course of eye, ear, nose and throat work in New York, will locate in Minneapolis.

Dr. Des Jardins, of the Mayo Clinic, has returned from a trip to Europe, where he went to study the röntgen ray and other radioactive substances at the University of Cambridge.

Dr. A. A. Wohlrabe, formerly of the Mankato Clinic at Mankato, has become associated with Drs. Willson and Cabot, of Minneapolis. The new firm name is Drs. Willson, Cabot & Wohlrabe.

Dr. Raymond W. Stough, of Beach, N. D., died last month at the age of 46, from infection following an injury to the nose caused in diving. The accident happened in the Yellowstone National Park.

The English Medical Examining Board has notified the Medical Department of the University of North Dakota that its graduates will be eligible to final examination of the English board of examiners.

A memorial tablet to Dr. Caryl B. Storrs will be placed in the Minneapolis Public Library. While Dr. Storrs had a medical degree, his life-work was that of a newspaper man and a literary, musical, and art critic.

Dr. Robert Earl, of St. Paul, was elected president, and Dr. Donald Daniel, of Minneapolis, was elected secretary and treasurer of the Medical Alumni Association of the University of Minnesota at its annual meeting last week.

Dr. P. A. White, who has been doing work at Rochester as a fellow in the Mayo Foundation, has accepted a position in the newly organized

Aberdeen Clinic at Aberdeen, S. D. His work will be general, organic and plastic surgery.

Dr. Rebecca Hanna, who retired from practice some years ago, died in Billings, Mont., last month at the age of 78. She was a graduate of the Iowa College of Medicine, class of '74.

At the September meeting of the free clinic for tuberculosis patients given in Hibbing fifteen patients were present, six of them being new patients. Dr. Lampson, of the Nopeming Sanitarium, says no better clinics are given in the state.

A group of medical men in Minneapolis have formed a corporation with a capital stock of \$150,000 with a view to erecting a clinic and office building. The incorporators are Drs. F. L. Adair, E. T. Bell, E. L. Gardner and E. H. Parker.

The Freeborn Medical Society held its annual meeting in Albert Lea last month, when the following officers were elected: President, Dr. J. P. von Berg; vice-president, Dr. W. L. Palmer; secretary, Dr. J. A. Schultz; treasurer, Dr. J. R. Nannestad, all of Albert Lea.

Dr. Edwin J. Batchelder, assistant in pediatrics in the Medical School of the University of Minnesota, died last month at the age of 54. Dr. Batchelder was a graduate of the Medical School, class of '93, and had practiced until recently at New Richland. He was specializing in the department in which he was teaching.

Dr. John L. Sippy, the epidemiologist of the Montana State Board of Health, has been making some remarkable guesses at the population of a number of places in that state, based upon the known number of deaths in such towns and cities. The official figures show his estimates to be almost uncanny. Do not such facts testify to the value of exact vital statistics?

The twenty-sixth annual meeting of the Minnesota State Osteopathic Association was held in Minneapolis on October 1 and 2. The program clearly showed that all departments and specialties of medicine have been invaded by these uneducated men, and the impression is given by newspaper notices of their meeting that even the blind are made to see by them.

The Red River Valley, the Park Region, and the Clay-Becker Medical Societies of Minnesota have merged into one society, called the Northwestern Minnesota Medical Association. Officers of the new society were elected as follows: President, Dr. Edward Bratrud, Warren; vice-presi-

dent, Dr. V. E. Verne, Moorhead; secretary and treasurer, Dr. W. L. Burnap, Fergus Falls.

Dr. George W. Clay, of Malta, Mont., died last month at the age of 47. Although Dr. Clay had practiced but twenty-two years in Montana, he was truly a pioneer, having gone to Malta when the country was wholly new. He was twice elected state senator and served his constituents and his State well.

A very distinguished honor has come to Dr. John F. Fulton, of St. Paul, and we congratulate him upon it. His son, John F. Fulton, Jr., has been awarded a Rhodes scholarship, which will give him the opportunity of studying in Oxford with an honorarium of \$1,500 a year. He has been studying at Harvard, shaping his course toward medicine, and will go to Europe next year.

The Ramsey County (St. Paul) Medical Society celebrated its fiftieth anniversary on September 29, and invitations to be present were issued to members of the State Medical Association present at the annual meeting. An entirely innocent vaudeville show was given, but the significance of it as a semicentennial anniversary celebration of a medical society is not self-evident.

The already large number of calls for locum tenens and for physicians to locate permanently in the small towns of the Northwest, as evidenced by the reading notices following our department of news items, is rapidly growing; and physicians cannot be found to fill these calls. Why should not some of our retired physicians take up substitute work, and spend one or more months a year in this way?

Dr. Paul Sorkness, of Fargo, N. D., died on September 23 at the age of 53. Dr. Sorkness was a graduate of the Medical School of the University of Minnesota, class of '95, and was a highly respected member of the North Dakota medical profession. He was at one time president of the North Dakota State Medical Association and was very active in both local and state medical matters. He had practiced in Fargo about twenty years.

The following officers were elected by the Minnesota State Medical Association at its last annual meeting: President, Dr. C. Eugene Riggs, St. Paul; vice-president, Dr. Arthur A. Collins, Duluth; second vice-president, Dr. Fred P. Strathern, St. Peter; third vice-president, Dr. W. A. Hunt, Northfield; secretary, Dr. Charles B.

Drake, St. Paul; treasurer, Dr. F. L. Beckley, St. Paul. As vice-presidents are harmless, men outside of St. Paul could be trusted with these offices, especially if such men inhabit small cities.

The annual meeting of the Southern Minnesota Medical Association will be held in Mankato on November 29 and 30. The preliminary program announces a list of physicians *outside* the state who will speak at this meeting. It is as follows: Dr. Hugh Cabot, Ann Arbor, Mich.; Dr. Emil Beck, Chicago, Ill.; Dr. H. Winnett Orr, Lincoln, Neb.; Dr. Reginald Fitz, Boston, Mass., now of Rochester, Minn.; Dr. Reuben Peterson, Ann Arbor, Mich.; Dr. Truman W. Brophy, Chicago, Ill.; Dr. E. B. Freeman, Baltimore, Md.; Dr. Harry E. Mock, Chicago, Ill.; and Dr. William L. Shearer, Omaha, Neb.

The Aberdeen Clinic of Aberdeen, S. D., opened its new hospital building on September 27 with appropriate exercises, Dr. Rosenow, of the Mayo Clinic, delivering the principal address. The new building is a handsome and commodious structure equipped in the most modern fashion, lacking nothing that will add to the comfort of patients. The members of the Clinic staff are the following well-known medical men: Dr. R. L. Murdy, department of surgery; Dr. R. D. Alway, department of eye, ear, nose, throat; Dr. D. R. Rice, department of internal medicine, and Dr. A. E. Holmes, department of genito-urinary and skin diseases. The new building supplements the Clinic building, erected a year or so ago.

PRACTICE FOR SALE

Unopposed village and country practice in North Dakota amounting to \$7,000. Practically no competition. Small investment; sure income. Address 390, care of this office.

LOCUM TENENS WANTED

A physician in Southern Minnesota wants a man to take charge of his practice from the latter part of October until the end of November. Satisfactory salary will be paid. Address 400, care of this office.

LOCUM TENENS WANTED

For one month, beginning October 10 to 15, in general practice in Southern Minnesota. Will pay cash. Address 389, care of this office.

PHYSICIANS WANTED

Two excellent unopposed locations in Minnesota towns with splendid farming community. Collections 100 per cent. Nothing to buy—step right in and make money from the start. Address 388, care this office.

PERCY CAUTERY FOR SALE

One Percy cautery complete with rheostat, four shanks, and eight tips is offered for \$35. Address or call upon the Drug Department of Asbury Hospital, Minneapolis.

MINNEAPOLIS OFFICES FOR RENT

Two offices and waiting-room for one physician offered for rent in the Pillsbury Building, Minneapolis, Address or call upon Dr. H. H. Thompson, 813 Pillsbury Building, Minneapolis.

FOR SALE AT NAPOLEON, NORTH DAKOTA

Office and lot, furniture, instruments, and drugs of the late Dr. Mathews. Napoleon is a village of between 600 and 700 people, with a rich surrounding territory. Address Mrs. Marie L. Mathews, Napoleon, N. D.

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Wanted in a live western North Dakota town a physician who will locate there at once. Good location, and no competition. Graduate from an A-1 school preferred. Address 385, care of this office.

PHYSICIAN WANTED

To locate in a good farming and ranching country in North Dakota; large territory and people all well-to-do; good crops. For particulars address 386, care of this office.

X-RAY APPARATUS FOR SALE

Almost new, a Fisher type H5 high frequency A. C., two tubes, 8-inch and 6-inch. Violet ray attachment. All in perfect working condition. A \$442.00 outfit for sale at \$285.00. Dr. J. K., 1007 Donaldson Building, Minneapolis, Minn.

X-RAY AND LABORATORY TECHNICIAN WANTED

A woman who can do the x-ray, laboratory work, and give anesthetics in office and hospital, is wanted in one of the smaller cities of the state. Address 402, care of this office.

HOSPITAL STERILIZERS FOR SALE

Scanlan-Morris high-pressure hospital sterilizers, two five-gallon water-tanks, and one utensil steam, one instrument sterilizer, electric. Bargain. St. Luke's Hospital, Minot, N. D.

OFFICE POSITION WANTED

A young woman who has had about a year's experience in the office of an eye, ear, nose, and throat specialist, desires an office position wholly in the waiting room or as a doctor's assistant. Thoroughly competent and of good address. Best of references. Address 397, care of this office.

POSITION WANTED

I desire to correspond with a city or a hospital that is in need of a good surgeon and diagnostician; or I will consider a partnership in a private hospital or a first-class industrial position. Address 391, care of this office.

ASSISTANT WANTED IN EYE, EAR, NOSE AND THROAT WORK

A well-known Minneapolis firm of eye, ear, nose and throat specialists want a young man as assistant. Splendid opportunity to advance in this specialty. Prefer an unmarried man, and must be licensed in Minnesota. Salary will be made satisfactory at all times. Address 394, care of this office.

ASSISTANT WANTED

As soon as possible, a graduate of A-1 school as assistant in large general practice; town of 600 in Eastern South Dakota. Will pay \$200 a month and all expenses pertaining to practice with monthly bonus depending on the amount of work handled. Prefer a recent graduate who has had hospital training. Modern office and library available. Address 392, care of this office.

PRACTICE FOR SALE

In North Dakota. An unopposed town and country practice of over \$7,000 cash yearly. Surgeon can make more. Rich farming community; A-1 roads; collections 99 per cent; free rent; hospital promised; good school, churches, beautiful natural scenery. Nearest doctor sixteen miles. Established practice of fourteen years. Will sell for less than cost of office equipment and drugs and thoroughly introduce. Going to specialize. Address 382, care of this office.

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Unopposed village and country practice in the richest and best farming section of Minnesota, about eighty miles from the Twin Cities. Practice mostly cash, and all good. Practice given to purchaser of small office equipment and household goods. Office in fine residence, with good garage. Rent cheap. No better field for country practice anywhere. Address 395, care of this office.

PRACTICE FOR SALE IN MINNESOTA

Unopposed \$5,000 practice in town of 400 in wealthy Norwegian community, sixty miles from St. Paul; collections 99 per cent and prompt; good fees; a farmers' town; farmers own creamery, elevator, lumber yard, and co-operative store, and most of stock in two banks with deposits of \$1,200,000. Competition from 7 to 15 miles distant. Practice can be doubled by right man. Office equipment and practice, \$500. Am leaving to enter firm in a larger place. Address F. A. Engstrom, M. D., Wanamango, Minn.

PRACTICE FOR SALE

South Dakota practice of \$8,000 to \$10,000 a year. Town of 700 in beautiful prosperous country. Will either sell excellent equipment, including drugs, for cash invoice and rent office-residence for present or sell everything on terms to suit responsible party. Here is a fine opportunity. If you have the means act quick. Address 384, care of this office.

ASSISTANT WANTED WITH VIEW TO PARTNERSHIP

As soon as possible, a married man, graduate of A + school, as assistant in country and general practice, including surgery; town of 700 in eastern South Dakota. Will pay \$250 a month and furnish everything pertaining to practice. Opportunity for partnership later. Income from \$9,000 to \$10,000 a year can be increased proportionately by two. Address 379.

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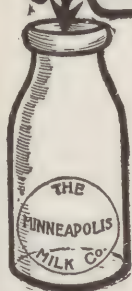
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The company has appointed Mr. C. F. Anderson its Minnesota distributor, and he will be glad to exhibit it to any physician. Mr. Anderson is well known to the profession as a wholly dependable salesman, and his guarantee is all that one needs for his protection in purchasing this admirable instrument. Mr. Anderson's address is 816 Pillsbury Building, Minneapolis. (Tel. Atlantic 0054.)

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These laboratories are now manufacturing an extensive list of vaccines, known as the "Beebe Vaccines," which are numbered for the sake of convenience in ordering. Every physician should be glad to be able to get from the scientific laboratory man the latest and most dependable literature on the new vaccines that are coming out, and neither the country nor the city physician can afford to remain ignorant of modern laboratory products.

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Dr. Mead's Nurses' Registry, "The Minneapolis," with headquarters at 879-881 Curtis Hotel (Geneva 8434; Atlantic 4400), supplies registered nurses, graduates and undergraduates, for duty in and out of the city. Special attention is given to obtaining nurses for institutional positions, as assistants to physicians in their offices, as expert masseuses, and for home nursing, and also mother helpers are supplied for assisting in the home, by the hour or day, and to care for the children while the mother is away.

Dr. Mead's Minneapolis experience in nursing service dates back to 1895, during the years she was superintendent and physician-in-charge of the Northwestern Hospital.

Hospitals at that time conducted their own registries, and central registries were not distinct. Her work during these years has been given principally to the much-needed systematizing and operating central regis-

tries, and her system has been widely approved and copied.

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Dr. Mead takes great pleasure and pride in still supplying nurses to members of the profession who were her patrons many years ago. She considers this a mark of good service.

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Dr. D. W. Lynch, who is a graduate of the Northwestern University Medical School, conducts such a sanatorium at West Bend, Wis., and has gained the confidence and the support of the medical profession of the Northwest by his ethical and successful work along this line. He will be pleased to correspond with any of our readers seeking further information of his work and methods.

THE AFTER-CARE OF OPERATIVE CASES

It is a fact well established by hematologists that a large majority of surgical diseases requiring operative interference, are preceded, accompanied, or followed by hemolytic changes. The more or less devitalizing effect of the original condition which brings the patient to the operating-table and the necessary anesthesia, reduces the hemoglobin percentage, and the shock incident to the operation contributes, to a certain extent, to the surgical anemia. Hemorrhage, suppuration, or sepsis, precedent to the use of the knife, intensifies the post-operative chloranemia and renders more than ever necessary the employment of hematogenic measures during surgical convalescence. Judicious but generous feeding is of prime importance in such cases, and sedulous attention should, therefore, be paid to the patient's dietetic requirements. Feeding alone, however, will not hasten recovery as rapidly as a judicious combination of feeding with a hematonic reconstituent such as Pepto-Mangan (Gude). Except in cases in which it

is not permissible to introduce food or medicine through the mouth, this palatable, readily tolerable and promptly absorbable organic combination of iron and manganese is distinctly indicated in preference to other blood-building agents, because it is agreeable, non-irritant, and free from constipating effect. Its hematinic, appetizing and general reconstituent properties are quickly evidenced subjectively, by a general feeling of well-being; objectively, by increased color of skin and mucous membrane, and hematologically, by a progressive increase in the number of erythrocytes and percentage of hemoglobin.

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We are confident the people, including physicians of the Northwest, do not appreciate the character of the climate of Arizona, especially in its relation to the sick. With less than a week of cloudy weather in an entire

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The sanatorium above named is located in Tucson, and is conducted by men, Drs. Jeremiah and E. W. Hayes, who understand the problem of tuberculosis as do few men in this country. The results hitherto obtained at this sanatorium have been exceedingly encouraging, and the institution is one worth knowing.

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Any physician who has given attention to the pathology of mucous membrane inflammation will be quick to appreciate the specific advantages of Alkalol for use in the treatment of such conditions, whether in the eye, nose, ear, throat, or the genito-urinary tract.

It is axiomatic that the best antiseptic solution that can be used on a mucous membrane is its own normal secretion. Unfortunately, however, even irritation of the mucous membrane that does not amount to well-defined inflammation, exerts such an influence upon the secreting cells as to markedly lower the physiological balance and activity of the secretion. Furthermore the use of a solution, either for cleansing purposes or to produce therapeutic results, often fails to secure satisfactory results because the solution used is of improper salinity, incorrect alkalinity, and deficient in those physiological salts which are needed to feed the

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THE MEDICAL POCKET QUARTERLY

The second number of the *Quarterly* was issued last month by its publishers, Messrs. Reed & Carnrick, whose purpose in sending this publication gratuitously to the medical men of the country seems to be just to drop in on their friends with a good anecdote, a bit of wisdom—just a few cheerful words, which will interest and amuse and, maybe, instruct any man.

A couple of pages of references to their well-known pharmaceutical preparations constitutes its only advertising "patronage," and the reader wonders how they can be so generous with their reading matter.

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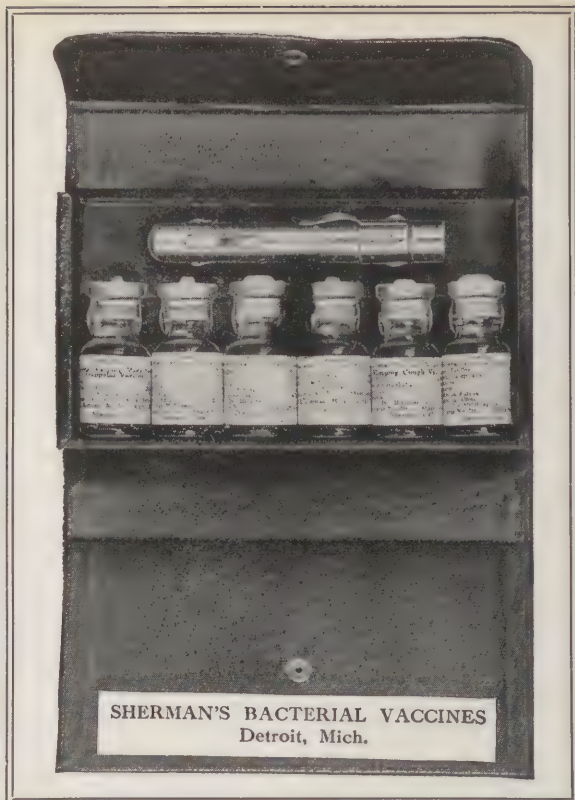
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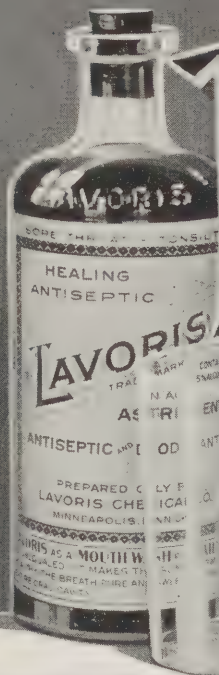
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A PLEA FOR THE EARLY RECOGNITION OF INSANITY*

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There can be but one valid reason for presenting such a topic as the above for the consideration of this enlightened audience, and that is, that it may serve the one and only purpose of assisting each one of us to recognize mental alienation in its earliest incipency, in order that suitable treatment may be instituted before any great damage has been done to the individual, thereby materially advancing his chances for ultimate recovery and saving much grief and heartache for the relatives and friends and much self-condemnation on the part of the physician, who thinks of what might have been had he recognized the symptoms from the very beginning and removed the patient from the surroundings in which the disease process had its inception to a refuge where early treatment might have produced a speedy recovery. I doubt not that each one of you has come in contact with one or several cases of mental disease in the course of a comparatively short time, and I ask each of you, in all good faith, "Is your conscience clear?" "Did you promptly recognize the condition before you?" "Did you see that suitable treatment was promptly instituted?" Or did you procrastinate in the hope that Father Time would either show you the light which would lead you out of your darkness, or that Dame Nature would come to your assistance and you would emerge with glory in this case as our law of average (95 per cent of cures without, or possibly in spite of, treatment) would lead us to expect.

Gentlemen, far be it from my purpose to set myself up as your mentor, but, should this minute effort be the means of assisting in the restoration of but a single case within the short period that this paper will remain near the threshold of your memories, then I shall feel amply repaid for my time and trouble.

Generally speaking, I am opposed to the practice of treating mental disease in the home. I grant, without argument, that there are sporadic instances in which this plan may be followed with happy results, but by far the larger per cent of cases demand a prompt removal from the environment in which the alienation has developed and, in some cases at least, where it assumes the position of a factor in the causation. I consider this removal fundamental.

We have, in this state, what I am told is an excellent institution for the care of the mentally afflicted, and I wonder if we are getting the fullest possible benefit of it. The old attitude of being horror-stricken at the thought of putting one's relative in a madhouse is fast giving place to the saner belief that a relative, mentally sick, is just as suitable a case for admission into the State Asylum as the physically sick is a proper case for admission into the general hospital. I sincerely deplore the fact that we have no private institution within the confines of this glorious state where such cases might receive suitable care and treatment, and hope that the time is not far distant when there may be one or several. You have no hesitancy in hospitalizing your case of appendicitis, typhoid, pneumonia, etc. Then,

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why should there be this paradoxical attitude of reluctance to hospitalize your mental cases? Logic, or anything else within the purview of my ken, would not support this attitude.

This leads us to a consideration of the nature of insanity. The definitions of this condition are legion, but I shall mention just two. For years we were more or less content with the following: "Insanity is a disease of the mind, produced by a disease of the brain, accompanied by disturbances of the intellect, emotions, and will, manifested by such changes in thought, feeling, and action as place the individual out of harmony with his surroundings." Rather ponderous when compared with the present-day definition: "Insanity is a mental mal-adjustment." Simple? Yes. But entirely satisfactory if you but stop and consider it.

It then becomes apparent that there are but two indications to be met in the successful treatment of these cases: first, removal of the causative factors, which is best met by removal of the patient to an institution; and, secondly, a mental readjustment. I believe you will agree that removal to an institution should not only remove the causes in a number of cases, but will also render the second phase of the treatment very much more likely to succeed.

I shall not bore you with the various classifications of mental disease, but shall now call your attention to some of the early symptoms which you are apt to encounter in a few of the major types.

Assuming that you are called to see a male between the ages of fifteen and forty-five whose previous history shows insanity, epilepsy, alcoholism, or tuberculosis in the antecedents, but who, up to the present time, has led an approximately normal existence and who has recently been compelled to give up his work because of a diminution of interest both in his work and play, inability to concentrate his attention, some impairment of memory, lack of initiative, periods of despondency without suitable provocation, inattention to the niceties of dress and conduct, anorexia, constipation, coated tongue, and insomnia. You immediately recognize that he is subnormal, but you are extremely reluctant to venture a diagnosis and almost afraid to institute treatment. You take his temperature and find it normal. The respirations are comparatively shallow and from fourteen to sixteen per minute. The pulse is normal. Your ordinary physical examination fails to show anything of consequence. The urinalysis discloses a scanty

quantity of rather concentrated urine, but no albumin or casts. Examination of his blood shows nothing of importance, except a slightly diminished quantity of hemoglobin and a slight reduction in the number of red-blood cells. It begins to strike you that you are more or less up against it, and rather than squarely meet the issue you begin to temporize, possibly ordering rest in bed, a regulated diet, a course of purgatives or soporifics at bedtime, to be followed later by a tonic for the slight anemia. I do not blame you, for you are treating the most prominent physical symptoms and expecting results. But you are not treating the basic symptoms, which are mental, and you are rather astonished that your patient does not promptly respond and be out of bed and resume his normal habits within a few days. Rather, he becomes progressively more depressed, more retarded, and less and less active until you have a full-blown case of maniac-depressive insanity—depressed phase—on your hands. Should, as is often the case, ideas of persecution, depressing hallucinations, delusions of self-abasement, and the defense reaction of suicide develop, then you become rather apprehensive and immediately begin to take steps looking toward his commitment to a suitable institution. But days, and maybe weeks, have now elapsed and the chances for ultimate recovery of your patient have been materially reduced. Then your conscience awakens and assails you with the question, "Why, in the name of all that is good and great, did I not recognize the nature of this case weeks ago and do what I am now compelled to do,—institutionalize him?"

The plea of this paper is to prevent just such recriminations and save a larger per cent of these patients to society, rather than have them become chronically insane and a financial burden to the tax-payers. The State hospitals are doing their best, but they cannot save those cases whose chances were lost during your period of temporizing. We need more team-work. You see the case early. Then it is up to you to recognize the condition and, by committing early to the institution, greatly enhance your patient's chances for recovery and make your institutional records show a materially larger per cent of cures.

As opposed to the preceding hypothetical case, let us assume that you are called to see a male patient between the ages of fifteen and forty-five whose family history may show nervousness, chorea, diabetes, tuberculosis, alcoholism, or some form of mental disease in the antecedents or collaterals, whose previous history discloses

nothing tangible, whose relatives have discovered that he is overactive, unduly busy, writing many letters, sending numerous telegrams, who has not time to eat or sleep or even properly dress himself, who is distractible, being easily diverted from one pursuit to another, yet never accomplishing anything of importance, as he is unable to pursue one thing to a logical conclusion before he is diverted by another, who talks incessantly, whose memory, though seemingly overactive, nevertheless shows impairment on closer examination, and whose judgment is warped. He has little or no fever, tongue dry and coated, teeth not cleaned, skin usually wet with perspiration from physical exertion, bowels constipated, urine scanty and highly colored, slight or moderate anemia, and headache. I have purposely overdrawn this excitement for the sake of saving your time. You will at once understand that I have tried to give you a picture of the maniac phase of maniac-depressive insanity and that it usually requires several weeks to reach this degree of excitement, during which time these symptoms have been present in gradually increasing severity. On the other hand, they might reach this stage quite suddenly—within one to three days. Even these cases are not sent to the asylums as early as they should be, as a rule, but as the excitement increases to the point of destructiveness to clothing and furniture and homicidal attacks on relatives and friends, then prompt steps for institutionalizing them are taken. These cases rarely suicide, as their emotional attitude is excessively cheerful and rosy, but deaths have occurred from injuries directly due to their hyper-activity. Much good can be accomplished and much harm prevented by early recognition of the mental affliction and prompt removal to an institution.

I do not mean for you to infer that this condition occurs only between fifteen and forty-five. I have seen it in the ninth decade, but maniac-depressive insanity is essentially a disease of the prime of life. Nor do I mean for you to infer that it is peculiar to the male sex. It occurs a trifle more frequently in the female. It is most likely to recur. Recovery from one attack is very apt to be followed by another, some cases having been reported as having had fifteen or more recurrences. On the other hand, it may completely subside after one attack. The different attacks in one individual may all appear as depressions or, in another, as excitements, or there may be two attacks of depression and one of excitement and vice versa, or we may find an

individual who passes from an excitement over into a depression without any intervening period of normality, or one may have two periods of depression or two periods of excitement, followed by a long intermission, during which he is normal. We sometimes see mixed cases. In one we may have an agitated depression or stupor, or we may have a melancholy excitement, etc.

Do not attempt to treat these cases at home. There are institutions for them, and their chances for recovery are very good if hospitalized early.

I shall here close the consideration of the maniac-depressive psychoses, not because a great deal more may not be said, but because our time is limited, and shall pass on to the next major type, the form of dementia precox.

Our patient in this instance should be a young adult, though this form of mental disease may occur late in life, between fifteen and thirty years, and the sexes are affected in nearly equal proportions. If of school age, we find a loss of interest, listlessness, mental apathy, indifference to self and surroundings, disorientation for time, person, and place, mutism or verbigeration, loss of memory, superficial and limited ideation, and weakened judgment. On the physical side we may find irregularly dilated pupils, disturbances of the patellar reflexes, anorexia, coated tongue, foul breath, and constipation. The patient is roused with difficulty, usually lying, sitting or standing in rather constrained positions, and is more or less loath to move. He will shake hands, if pressed, but you feel a cold clammy hand, which lies passively in yours without gripping. He will apparently be looking at you, but you will notice what appears to be a lack of pupillary accommodation, giving rise to a peculiar staring effect. The fact is that he is looking through you into space. There may be fine tremors of the lips, tongue, and fingers. His movements are usually of an impulsive, jerky character, and there may be mannerisms which may affect attitude, gait, speech, or movement. His conversation is irrelevant and incoherent, with stereotyped phrases interspersed. Later, bizarre or grotesque delusions develop; and sometimes hallucinations of one, several, or all of the special senses supervene. A diagnosis of the hebephrenic form of dementia precox is justified.

Assuming that superimposed upon the above we have theatrical gestures and poses, together with wavy flexibility of the muscles, his body and extremities maintaining, for long periods, the position in which you place them, until they are compelled to change from sheer exhaustion,

or he remains rigid for hours at a time, or develops automatic movements and suppresses the emunctories or passes excretions in his clothing—then you are probably dealing with the catatonic form of dementia precox.

Should the various delusions appear unusually prominent and more or less fixed, though bizarre, and the patient assume the attitude of being persecuted, and react accordingly, both by his argumentativeness, his writings, and by fighting those around him, who, to him at least, are his tormentors, then a provisional diagnosis of the paranoid form of dementia precox is suggested.

In either form the patient may become destructive to his clothing or the household furnishings, though this symptom is more apt to be encountered in the hebephrenic or in the excited catatonic than in the paranoid form.

In general paralysis of the insane, or paresis, which usually develops ten or fifteen years after syphilitic infection, and, accordingly, is usually found in patients between thirty and forty, though sometimes later, but seldom earlier except in the case of juvenile paresis, which is inherited, the central thought to be acquired is that we here have an organic lesion which is a meningo-encephalitis, and we have two sets of symptoms, meningeal and cortical. Time will not permit of an extended discussion, but I shall enumerate the classical symptoms. The patient, formerly steady and quiet, becomes rapidly more and more excited, enters innumerable business ventures, becomes imbued with the impression that he is the most prominent or most important personage in the world, expends enormous imaginary sums of money, becomes the richest person in existence, everything takes on the most roseate hue, he becomes the healthiest and strongest man in the world and conducts himself in accord with these delusions. He buys clothing to suit his station, jewelry, automobiles, airships, mines, railroads, steamship lines, etc. Nothing is too great for him to manage, and no sum of money makes any impression upon him. He will check out millions or billions as lavishly as dollars. He becomes, in effect, the center of the universe and all things revolve about him. Examination at this time, which is naturally made under difficulties owing to his extreme activity, discloses irregular pupils, either dilated or minutely contracted, reacting sluggishly or not at all to light, but usually reacting to accommodation, though irregularly or sluggishly, disturbances of the knee-jerks, which may be greatly exaggerated, greatly diminished or absent, and,

frequently, asymmetrical, possibly ankle clonus, glossolabial tremors with marked thickening and stammering speech and usually fine tremors of the fingers. Examination of the spinal fluid frequently gives a + + + + Wassermann. Convulsive seizures, either of the epileptiform or apoplectiform type may occur.

Of course no difficulty would be experienced in making the diagnosis in the full-blown case as above depicted, but the plea is to suspect this condition when any of the above mentioned symptoms make their appearance and endeavor to ward off some of the difficulties which will follow if the disease is not recognized early. No hope of recovery is offered by the early institutionalizing of these cases, though quite a few, under careful hospital management, do have periods of remission of symptoms and occasionally trip the inexperienced into believing that a cure has been effected. Much has been claimed for the intraspinal and intraventricular methods of administering salvarsan and its derivatives, especially salvarsanized serum, but end-results do not, in my opinion, justify these mental extravagancies.

It was my original intention to cover the entire field of mental diseases in this paper, in the same manner in which I have covered three of the major types; but I find that the time limit is staring me in the face, and I shall refrain from trespassing upon the time of my successor, much as I dislike to give you an unfinished paper, and close this essay with one short sentence.

Having in mind some of the more important symptoms of that bugbear of the general practitioner, insanity, we beg to offer up the following prayer: "Please let me, in my sublime ignorance, recognize that there is such a thing as mental disease, let me recognize it early and help me squarely to meet the issue, either alone or in consultation with one who, I hope, knows a little about it, and send my patient to an institution, either private or public, even though this action meets with the eternal damnation of some of the gossiping relatives and friends, so help me, God. Amen."

DISCUSSION

DR. G. S. ADAMS (Yankton): This paper is very interesting to me; however, it is the general practitioner who is first consulted in the ordinary case presenting mental symptoms, and, I am sure, the paper has been helpful to those who have been fortunate enough to hear it.

Before there was any grouping of nosological entities in insanity, the classification was one entirely of symptoms; that is, all cases showing abnormal mental

depression were grouped as melancholias, and all cases showing abnormal excitement were grouped as manias, irrespective of whether the symptoms were primary or secondary and irrespective of the cause, pathology, or termination. Sometimes it is very difficult to make a diagnosis between sanity and insanity.

There is one point I would like to make in this connection, namely, that there is probably no disease in the realm of psychiatry where early and correct diagnosis is so important as it is in general paresis. It is not at all uncommon for men of wealth to be suddenly thrown into poverty by following some of their delusional ideas in the early stage of this disease, before it is recognized by their friends. Sometimes a highly respectable citizen will commit some outrageous act, much to the chagrin of his family and others, and it is not recognized as a mental symptom until after the disease has progressed and until it is evident to everybody. The early recognition, particularly of the early symptoms of paresis, will save the family much humiliation and grief, and oftentimes conserve the patient's wealth.

I am sure that the general practitioner sees these cases early, and I can only add to the plea of Dr. Hummer that action be taken earlier than it is usually done in such cases.

DR. RICHARD G. EATON (Ethan): I want to say just a word in appreciation of this vivid word picture by the reader of the paper. I think it is as accurate and as interesting a description as I have ever heard. The author has brought out the three or four most common types of insanity.

I saw a case yesterday in consultation. The man was much depressed, and he has been despondent for some time—for about a year—still he has been working for a railroad, but has not manifested much interest in his work. He had certain delusions that were fairly well marked. His delusions were against Catholics, but they were not terribly pronounced. The most pronounced symptom was despondency and a feeling of inadequacy. He is a man about fifty years of age, and from the symptoms he manifests it would appear to be like a case of paranoia. He had a feeling that he did not wish to go out of doors and did not wish to mingle with people. There was a slight feeling of self-abasement, and I concluded that the case was one of melancholia. If treatment had been instituted a year ago, when the first symptoms appeared, it would have been much better for the man no doubt.

We lack a private institution for such cases as this in this state. It would be fine if we had one. Perhaps it is not necessary that all such cases should go to an institution. I think Dr. Hummer will agree with me when I say that if these people can be taken to an institution they will have suitable attendance and suitable medical care, and probably other conditions might be more favorable,—for instance, such as are furnished in a summer resort. A good many patients resent hospital or institutional treatment, and they get along better if surrounded by favorable conditions, such as are furnished by a private sanitarium or some resort. This man should be by himself, and not be bothered by other people interfering. If he goes to an institution, he will be treated properly, and in nine cases out of ten, if he did not go to an institution, the people would come in and things would be done to divert him. There must

be a great many cases similar to this,—for instance, where depression has been running on for a long time.

I think these mental symptoms, whatever they may be, ought to be recognized early by the general practitioner, and the patient either taken to an institution, where there might be a clinic, or if there is any specialist about he could see him. I think it quite advisable for all physicians to take their mental cases to an institution, if possible to do so.

DR. F. V. WILLHITE (Yankton): I would like to take this opportunity to bring before this Association some work that has been done on dementia precox by Dr. Bayard Holmes, of Chicago, who has been one of the most enthusiastic and intelligent workers in this country. It has been found that practically every case of dementia precox that has been examined with the x -ray after a barium meal showed cecal stasis, lasting from three or four days to five weeks. This stasis has a rudder-shape and ends in the ring of Cannon, which is the muscular ring near the hepatic flexure. This muscle is in a state of tonic contraction, and supports a column of water from forty to fifty-five centimeters in height before it gives way. They have found in the cecum a toxic substance with a reaction which produces an erythema of the smoothest skin, which when introduced into the guinea-pig, causes contraction of the uterus. It is an ergot-like substance, probably a splitting of some amino-acid substance, such as histamin.

In this cecal stasis they found the colon bacillus, which is capable of producing such a splitting, and this toxic material is produced in sufficient quantities to produce a toxic condition, which, when absorbed into the portal circulation, appears in the brain and produces its effect upon the cerebral cortex, and that is the primary trouble in dementia precox.

Dr. Holmes, in order to overcome this cecal stasis and absorption of the toxins, has advised the operation of appendicostomy. He brings the appendix into the abdominal wall and sutures it, cuts off the appendix, introduces a small catheter, which he fixes permanently, and five hours after the last meal of the day the bowel is washed out with eight or ten quarts of water, which leaves the lower bowel free of toxic products, on the assumption that histamin, or any other substance that has escaped absorption in the upper bowel, will have passed by that time the ileocecal valve, and it can be washed out and will leave the bowel free for the night.

Our results have been more than satisfactory. Dr. Holmes has effected some remarkable cures, and the reason I bring this subject up at this time is, primarily, because of its relation to the point Dr. Hummer expressed, namely, of making an early diagnosis and instituting early treatment.

After this process has gone on for a long time there is great destruction of cortical cells, and the nerve tissue is not repaired to any extent, and after the damage is done the most you can hope to do is to stay its future progress; but, if given early, the chance for a cure seems remarkably good, and, unless it is done early, there is no chance of recovery.

I wanted to bring this to your attention, not only because of the newness of this experiment, but because of its relationship to the importance of early diagnosis and the institution of early treatment.

DR. J. C. OHLMACHER (Vermilion): I was pleased to hear the first part of Dr. Hummer's paper, although

I did not hear all of it. I think such papers are always timely, and I do not believe any medical association should meet without having at least one paper dealing with mental diseases on the program.

The ordinary general practitioner, or the extraordinary general practitioner, if you will, does not recognize a great many insanities, especially in their incipency. This is because of lack of training they get in the medical schools. The curriculum is so arranged in most schools that the training in mental diseases is very small, comparatively speaking. One of the things that should be done in every state is to utilize state hospitals for the purpose of holding clinics, ocular clinics, if you will, in which the psychoneurological features of all these cases can be demonstrated by those best able to present such subjects. Personally, I cannot conceive of a mental disease which it not a manifestation of a functioning brain,—in other words, a physical thing. Mentality is not something apart from the physical entity. A brain that functions normally must of itself be normal. Brain tissue, like any other tissue, is susceptible to extraneous and endogenous assaults.

The work of Dr. Holmes on the relationship between intestinal putrefactive products and the causation of dementia precox seems to be fairly well assured. These assaults bring about in susceptible brain tissue certain histomorphological changes and possibly physicochemical changes, which result in the manifestations of dementia precox and other diseases.

One of the things we should have in every study along with our lectures on tuberculosis, as in other fields of preventive medicine, is a lecture on mental hygiene, not only for the purpose of trying to give the physician a little more light in these cases, but for the purpose of enlightening the general public, and particularly that part of the public which has to do with the education of children.

DR. A. W. ADSON (Rochester, Minn.): I am not a bacteriologist, but I am interested in this subject, as we see patients constantly that are in the early stages of insanity.

I enjoyed Dr. Hummer's paper immensely, and I only want to emphasize what I consider to be a really important point. First, the early recognition of mental derangements and, second, hospitalization. Then I wish to touch on another subject, the surgical side of an allied condition, particularly on account of appendicostomy that came up. First of all, there are many conditions which are not recognized until it is too late, and I am going to illustrate this point by giving you a brief history of a patient who came to us.

A boy had been wounded by a 22-caliber bullet, which lodged in the cerebellum, but apparently was producing very little trouble. There were very few symptoms of cerebellar ataxia. This boy developed Jacksonian epilepsy, or grand mal epilepsy, with a little cerebellar ataxia. Upon an organic basis he had a beautiful history. He came to the clinic. I walked into the office and saw this boy strapped in a wheel chair, which made me suspicious. He promptly had a fit. We took him into the room, and after the convulsion was over (he had not been frothing at the mouth), in a minute or so, he had another fit. We suspected the history. We permitted the boy to lie on a couch, which was low, and told his brother that if he had another fit we would not hold him. The brother stated that it usually took

two or three men to hold him, and he became destructive. He slipped on the floor, then bumped his head, deliberately pushing his head against an object, and when he saw we failed to hold him he broke the nose of one of the doctors because we did not hold him. We turned to him and said, unless you get over this foolishness you will be sent to the State Hospital. He was sent to a sanitarium at Lincoln, Nebraska, and in one week his trouble was over. He had an occasional attack, but no more hysterical epilepsy, so that early recognition of these cases is important.

With reference to intestinal stasis: I think it is very evident it is a definite factor, and that epileptics of all sorts may have their attacks lessened by cleaning out the intestines. Reed, of Cincinnati, some time ago did a lot of work on intestinal stasis. He short-circuited the bowel, and did appendicostomy; and every patient with epilepsy was soon going to Reed. Of course, these patients got better for a time, but practically not one of them was cured of epilepsy.

I am sure the work Holmes has been doing is of value. We have to consider the whole subject before we manifest a tendency to follow a tangent. I am positive intestinal stasis is a factor in producing these toxins. Patients with stasis have slow peristalsis. The work of Holmes may be extremely valuable, but I shall be cautious in advising appendicostomy because Reed did it in all epileptics. Personally, I have had to close several of them, and they have not been improved. The intestinal stasis should be cleared up, but it is rather drastic to subject these patients to appendicostomy and have a constant leaking of the wound for the rest of their lives.

In regard to injuries and tumors, in one of the state institutions of Minnesota and in the City of Rochester, where we see a number of cases, I have seen only one case of insanity associated with tumor. We see all sorts of mental disturbances and aphasias, on account of localized lesions, but brain tumor and insanity rarely go hand in hand. However, when a patient is insane from a localized brain lesion, he ought to be operated on.

DR. H. J. G. KOOPS (Scotland): I am certainly pleased that Dr. Hummer brought this subject to our attention. I think we all fully appreciate the points of the doctor's argument in making a plea for early diagnosis and for early treatment; but, as to hospitalization of these early cases, there are several questions that arise in my mind. If the doctor means hospitalization at institutions particularly maintained for the insane, then several questions come up. In the first place, we all recognize the fact that it is difficult to say just when insanity begins, and naturally in this state and perhaps in all states, so far as I know, a person has to be legally committed to a state institution. That requires a process of law which aims at taking the patient before a board of insanity, consisting of one physician, the states-attorney, and another individual, who is not a doctor. This committee with the doctor that has the patient in charge must convince the board of insanity that the patient is really insane, whatever that means. Then comes the stigma, whether we look at it that way or not, and the patient is committed to an institution. All those factors have a bearing on this point, and the question arises, What effect does it have on the patient himself? I would like to ask Dr. Hummer, who ap-

pears to have made observations on this point in the early stages of insanity, if these patients are committed to an asylum for the insane, what is the mental effect on them? Is it beneficial or detrimental to their condition, and, if they are brought in contact with people who are worse than they are, is it not apt to affect their mentality in such a way that the association is rather detrimental than beneficial? These are the points that have arisen in my mind in relation to this topic.

DR. E. C. DAVIS (Eagle Butte): I think any physician would experience more or less difficulty in attempting to commit a patient to an institution whose case is a border-line one. He may not be in the quiescent stage of insanity. Concerning any case that is not maniacal or is not evidently a border-line case, you can hardly convince the insanity board that the man should be committed. I speak from experience because I had a case not so long ago where there was presented to me a marked case of maniac-depressive or circular insanity. His attacks were occurring at shorter intervals. During the time he was committed his mental condition cleared up so that he was not admitted. During the next attack he became quite suicidal and homicidal and he ended his career by committing suicide. Had that man been committed, that would have been prevented.

There is a large number of border-line cases, like the psychasthenics and morons and all these other cases that are really better off in institutions which can hardly be committed under the present form of commitment. While I was connected with Kankakee, patients were admitted from Chicago to the psychopathic institute, and sometimes two or three weeks would elapse after an examination by the staff before the nature of the insanity was finally determined, and this examination was made by men experienced in that line of work. If we were not able to determine whether a man was insane or not after observation, how are we going to convince a board of three members that such a patient is insane and have him committed?

An institution is the only place for insane patients, because in a private home you cannot institute proper treatment,—hydrotherapy and other things that are the recognized treatments in quite a few of these cases.

DR. HUMMER (closing): It is very gratifying to me to see what a discussion my brief has brought forth, and it is further gratifying to see how many giants we have amongst us in this specialty, which I assumed is more or less a bugbear to the profession, as I indicated in my paper.

A great many points have been brought up that are well worth considering. I cannot cover them all in the few minutes left me. I was particularly impressed with Dr. Willhite's discussion of Dr. Holmes' work on cecal stasis. It is excellent work indeed. I hope the end-results will be all he claims for them.

As to Dr. Adson's remarks: I think we should be a little careful not to go too far, not to be carried away with a new thought to the detriment of our patients. I believe that Dr. Reed, of Cincinnati, was carried away with the thought that epilepsy is produced by the bacillus epilepticus, whose habitat is in the colon. He, therefore, removed the colon, which is a very drastic measure to undertake. He has had a chance since that time to change his attitude; and he has discontinued the operation, by which epileptics were not materially bene-

fited except for the time being.

Dr. Koobs' remarks were very pertinent. He wants to know if the effect of the institutions and of the sights presented to the patient in the institution are detrimental. I believe in the majority of chronic cases it makes no difference. They are not impressed; but the acute cases who have more or less lack of insight into their own conditions, when placed in an institution and seeing the erratic conduct of others, are greatly benefited. They begin to get a little insight into their own condition, and eventually show a large per cent of cures.

Dr. Davis, who referred to a case of suicide, made some very pertinent remarks. Most of these cases of suicide can be prevented by admission into an institution. They cannot be prevented on the outside. It is pretty hard to prevent them at the resorts where they have to receive constant care and attention; therefore constant surveillance in an institution is worthy of trial.

As to the difficulty of convincing the board of insanity that a patient is insane and a suitable case for admission into an institution: I rather deplore the method of committing them. In this state we have a voluntary admission act whereby a patient can enter an institution of his own volition. Dr. Davis' remarks bring up the point that in the larger Eastern centers we have psychopathic institutes. There is one in Boston, one in New York, one in Ann Arbor, and one at the Johns Hopkins, where these patients are placed temporarily, and when found to be suitable cases for institutional care they are transferred to the institution.

I have been literally astonished to see that you are all so much interested in such a dry subject. The discussion brought forth has increased the value of the paper by 400 per cent. I thank you.

FATE

BY A MINNEAPOLIS PHYSICIAN

I gleaned a new deduction
About a vicious germ;
Thought I'd write a paper
For others to discern;
Looked up all my data,
Put it in a brief;
Then I wrote a résumé
And sent it to the chief.

That I'd read it at a meeting
Was my sincere belief,
Because of this presumption
I forthwith came to grief:
"There are others more important,"
Came the callous reply;
Thus my little bug adventure
Was shelved—left to die.

Many a thought lies dormant
As the world moves on,
Because some chief's (?) decision
Is mighty, mighty wrong.
A manuscript quite musty
Some day will unfold
A scientific gleaming,—
Conceived, but untold.

WAN O. SQUILL.

APPENDICITIS IN CHILDREN*

BY F. W. MACMANUS, M. D.

BASHAW, ALBERTA, CANADA

Thirty-five years ago, probably somewhat less than that, appendicitis was recognized as a rare condition, or, perhaps it would be better to say, it was rarely recognized as appendicitis. When pain occurred in that region of the abdomen accompanied by a certain amount of tympanites, the ordinary general practitioner pronounced it typhlitis, paratyphlitis, or just plain enteritis. During the past twenty-five years it has been discussed by professional men and laymen in and out of society meetings, in clubs, and in sewing-societies, more and more in each, especially by those who have lost their appendices, for, as Irvin Cobb says, "They like to tell it all over again whenever they can get together an appreciative audience"; it has become familiar to almost every one, and they go to their doctor with the diagnosis made in so many cases that the surgeon is almost obliged to operate in self-defense. So great a percentage of our population has undergone pruning operations in the region of the appendix that it seems the professional pendulum has swung in the opposite direction almost to the limit of the stroke; and, as matter of fact, there is probably no other disease in children under ten years of age which has resulted so fatally as appendicitis with the one possible exception of the zymotic diseases in children under five years of age.

There are some conditions to be met in the child which are not met in the adult. We have learned to meet these conditions successfully in an adult case, but, if we try to follow the same line of treatment in a child suffering from this trouble, we are doomed not to obtain the same degree of satisfaction. In older children, those above ten years, it takes on more of the characteristics of the adult type; and the fact that the death-rate in young children has remained high is undoubtedly due to the fact that we have tried to treat them as we would treat the adult, and have thereby erred.

There is a difference in the anatomical structures of the adult appendix and of the immature appendix of the child. The infantile type is shorter and more conical; the mucous and serous coats are thinner; and there is a vast difference in the ceco-appendical connection. Comparing it with the size of the bowel, it is much larger in

the child than in the adult, also larger according to body-weight.

The coats being thinner they are much more delicate than the coats of an adult appendix, a fact not to be forgotten or left out of consideration in making a prognosis. All the structures are more delicate, but the mucosa is especially so in the child. As a usual thing, the meso-appendix is shorter, and this fact has been given as a probable cause of circulatory disturbances in that part of the appendix which extends beyond the meso-appendix.

Another thing to be given due consideration is, that the omentum is very thin and its resistance to trauma is correspondingly less, and being less resistant to trauma, it forms a better path for the advance of inflammatory processes.

During the early nineties, sometimes before and sometimes later, appendicitis was attributed to the presence of foreign bodies within its cavity; and those who advocated it as the especial cause were always displaying, in support of their belief, fecal concretions, enteroliths, or various kinds of seeds which they had found; but these stock causes lost prestige after a long series of post-mortem examinations had disclosed the fact that these foreign bodies were present in fully half of all cases, nearly all of them showing no evidence of past or present inflammation. If they are directly concerned in the causation of inflammation of that organ, the fact still lacks confirmation, and is open to serious doubt.

Morris Richardson says, "The worst thing that can get into an appendix is a bacterium." What he means to say is, not that they merely get into the appendix, but that they are forced to remain there, propagating their kind and emitting their toxins until they succeed in breaking down the resistance of the mucosa. Virulent bacteria endanger a vestigial organ, such as the appendix, which, like all others of its class, possesses a low degree of resistance, is very susceptible to the inroads of bacterial toxins and suffers destructive changes on slight provocation. Probably the least harmful of these bacilli are the colon variety, which finds a natural habitat anywhere in the alimentary canal, being harmless under ordinary conditions.

Dr. House says that the colon bacillus remains non-pathogenic as long as the structure of the appendix remains intact, losing sight of the fact

*Presented at the thirty-third annual meeting of the North Dakota State Medical Association, at Minot, June 15 and 16, 1920.

that it is pathogenic under all circumstances, but that the toxins are given off in so minute quantities that the digestive fluids neutralize them, and they are carried outside of the system by the bowels with no resulting harm to the tissues.

There are two recognized causes of appendicitis outside pressure, the first being when the appendix lies at the outer side of the cecum and against the abdominal wall, or in a pendent position at a time when, in the female, there is an inflammatory condition of the tube or ovary. The relationship of appendicitis to specific infections must always be considered and differentiated in female children; or the pendent appendix may be caught up in a band of adhesion thus shutting off the circulation and instituting an inflammatory process.

Another point to be considered in appendicitis in children is, that fecal concretions, seeds, enteroliths, etc., are found quite as often during the first five years of the child's life as in the entire remaining period of his existence. There are two reasons for this: a child is not so discriminating in regard to the choice of his food as the adult, and the cecal opening is more patulous.

Still another point in the etiology is sex, the male being affected in the ratio of two to one. This average has been gleaned from such authors as Manly, Holt, Fischer, Samuel W. Kelly, Metchnikoff, Genser, and a few others. In the City Hospital at Cleveland, Ohio, we found the percentage rather higher than the above, being about seventy-one per cent.

Appendicitis is accompanied by numerous changes in the pathology, and, in view of this fact, as a matter of nicety in making a classification, these changes have been termed catarrhal, ulcerative, suppurative, or gangrenous, according to the stage in which they are found at operation. An appendix may run this entire gamut of changes if left to itself. If operated on at the beginning, it will be found to be catarrhal; whereas, if left until the final stage, it will be found to be gangrenous. This classification is, therefore, of no value clinically. The main purpose is to establish the presence or absence of an inflammatory condition regardless of the stage it may have reached.

It has often been demonstrated that the severest type of appendicitis in children occasionally gives no symptoms whatever until the abscess ruptures. Then the little patient is seized with extremely severe pains, sometimes sinking into a comatose condition, and death follows before an operation can possibly be performed.

Allow me to give the history of one such case,—these fulminating cases so called. A surgeon of national note was called in consultation with Dr. Fred Taylor in the case of a boy of twelve years, who had been attending school regularly, performing his duties as chore boy about the premises each evening and morning, playing with his comrades during the remainder of his leisure hours, and never exhibiting any symptoms of abdominal trouble until the evening of the consultation. Upon this particular evening he was playing, as usual, with his fellows upon the lawn when he was seized with very agonizing pains in the abdomen, which were not localized. He began vomiting almost immediately. At the consultation the little fellow was all but exhausted. This was at eight o'clock in the evening. By eleven o'clock he was transferred to the City Hospital, where the abdomen was found to be filled with pus and a general septic peritonitis was in rapid progress. He died the following morning at five o'clock.

In all probability the abscess had been in process of formation for days or even weeks, giving no premonitory symptoms, rupture taking place under physical strain at a time when he was feeling altogether well and fit. It is not difficult to see that any sort of classification is worthless so far as the clinical picture is concerned. It is sufficient to know that an inflammation of the appendix, like inflammation of tissues anywhere, passes through all the stages from simple interstitial round-cell infiltration, suppuration, ulceration, perforation, or sloughing unless interrupted by operation and sometimes without any complaint upon the part of the patient.

In considering the symptoms of appendicitis in children, as we have stated, we are sometimes too prone to judge them in the same light as found in the adult. We all know, but we sometimes fail to make this differentiation, that the symptoms of appendicitis in children are often vague and are veiled in obscurity. In failing to remember these facts we are led to other conclusions by suggested and misleading symptoms elicited from the examined. There is the beginning pain, of varying severity, reflected to the distribution of the plexuses of Meisner and Auerbach, then to the back, the umbilicus, almost anywhere the physician may point the examining-finger; this is especially applicable to the epigastric region, where pain is almost as frequently found as in the right iliac region.

There is a very good general rule that we have gleaned somewhere which, although not infal-

libile, is very satisfactory. If the child be over four years and there is constipation, it is safe to say appendicitis; if under four and there is a diarrhea, it is most probably gastro-enteritis. In the child under four years who has constipation, it is always well to exclude appendicitis; and in the child beyond that number of years, it is safe to assume you are not dealing with a gastro-enteritis.

Pain, therefore, in the child's abdomen loses some of its diagnostic value. But, when a "restless, roving, homeless, unsettled pain, claiming no permanent abode," as Irvin Cobb says in "Speaking of Operations," a pain which finally settles down somewhere in the neighborhood of the umbilicus, is accompanied by other symptoms which may be construed as diagnostic, it indicates appendicitis, and the time has arrived for operation.

With such a pain in a child more than four years of age there are usually vomiting and a lack of peristaltic bowel action. The vomiting may be very severe and exhaustive, persisting for twenty-four to forty-eight hours, sometimes without intermission. Vomiting does not depend upon the stomach contents, but is purely reflex in character. Indeed, it is easier for the patient when he has something in the stomach to vomit, for the retching which follows the complete evacuation of the stomach is exceedingly distressing and exhaustion rapidly ensues. Narcotics to control this pain are required in such amounts as to prove a positive danger in themselves.

When such a pain has persisted for three or four hours without getting an evacuation of the bowels with enemata, it is good evidence that you have an appendicitis, and an immediate operation advised. Even should the operation be delayed for twenty-four hours and the bowels have evacuated themselves in the meantime without reducing the pain, there is still ground for suspecting appendicitis, and operation strongly urged on account of the dangers of rupture and general peritonitis. There have been a few cases of diarrhea reported in appendicitis in children above four years, up to ten, but they are not many, and, as stated above, more than likely they point to a gastro-enteritis, although it is always necessary to be extremely careful in coming to a definite conclusion as to the presence of the latter disease without corroborative evidence.

Posture is a symptom which should always receive more attention in the child than in the adult, because it is of more diagnostic value than any other. He usually walks with a decided limp

and has a tendency to maintain this flexed position of the thigh whether standing or reclining.

Tympanites is more apparent in the young than in the grown-up, and appears earlier, especially where there is peritonitis. The pulse becomes rapid from the outset, there is the anxious expression of the face, and the temperature rises to 103° or slightly higher.

Muscular rigidity is an important symptom when it can be elicited and especially that of the right rectus. A very serviceable manner of obtaining the reflex is by spreading the fingers of the left hand with the finger-tips pointed downward over the abdominal surface above the umbilicus, and gently stroking across the abdomen with the pad of the fore-finger of the right hand. In this way you will be able to detect any difference in the rigidity of the two recti. In using this method it is well to begin stroking very lightly, as a rough stroke is liable to frighten the child, and crying or sobbing has a tendency to cause rigidity of the entire abdominal musculature.

The blood-picture is not looked upon as of diagnostic value on account of the many obscure conditions which may bring about a varying degree of leucocytosis aside from appendicitis. Appendicitis calls for a positive diagnosis long before the blood has had time to fortify itself, and for this reason is not seriously considered. There are many diseases to which the patient has been playing host, perhaps, before the onset of appendicitis. Among them may be mentioned gastro-enteritis, typhoid fever, suppurative pancreatitis, otitis media, hip-joint disease, pleurisy of the diaphragm, basal pneumonia, ileus, or any other of the slow-acting suppurative processes. Either the basal pneumonia, gastro-enteritis, or diaphragmatic pleurisy is very liable to be productive of puzzling situations.

There is a case illustrating this point still fresh in the minds of two Williston physicians which I consider of more than ordinary interest. The patient was a boy of seven years who had enjoyed up to that time very robust health. He was seized with severe abdominal pains on the evening of September 10, 1914. The mother administered a large dose of castor oil and followed this with a dessert-spoonful of Rochelle salt every two hours. Toward morning, vomiting of a very severe character ensued, continuing for twenty-eight hours without an intermission of more than ten minutes at one time. At four o'clock of the following morning we began enemata, giving a large soap-water injection every

hour until eight o'clock without obtaining the slightest result. At nine o'clock we pronounced it appendicitis. Temperature, 103.4°; pulse, 134; furred tongue with red edges, tremulous, slightly tooth-marked; bad taste and a foul breath. We advised operation and began making the usual preparations. In a short time tympanites began, and the abdomen became tender to the lightest touch. Distension began at about the same time.

It will be remembered there was no cough, no pain of any sort in the chest, no râles or other adventitious sounds which we could detect. But there were abdominal pain, tenderness, tympanites, vomiting, and absolute constipation. The presence of all these abdominal symptoms and the absence of all thoracic symptoms seemed to make the diagnosis plain, and yet there was a lingering doubt as to the correctness of that diagnosis. It seemed it were an impossibility to make a mistake in this case, as it was either appendicitis or acute intestinal obstruction from some other cause, demanding an operation in either case, but we hesitated. At three o'clock in the afternoon the pain seemed to be higher, and in another hour there were the scraping crepitations of pleurisy and faintly sibilant râles of a basal pneumonia. The pain had entirely subsided the following morning, and dullness became very manifest just above the diaphragm of the right side. We aspirated a half pint of serum, when dullness was discovered, repeating the operation every other day for four or five days, obtaining less of the fluid at each succeeding tapping. In three weeks the patient made a complete recovery and is today a strong robust boy again. We have been thankful many, many times that we did not operate.

This case illustrates the ease with which a mistake in the diagnosis of diaphragmatic pleurisy may be made on account of the delay in the development of abnormal chest-sounds. Exactly the same difficulty has often arisen in diaphragmatic pleurisy alone, unaccompanied by a basal pneumonia. In all these and in gastroenteritis which is ushered in by constipation, it devolves upon the attending physician to pursue a waiting course, much as he may dislike doing so.

Then there are those cases, which, after the initial symptoms, gradually drift into a more serious condition without any alarming symptoms whatever, that of an insidious septic peritonitis. Such cases teach us to be ever upon our guard. If there is a daily rise in the temperature despite the subsidence of the more acute symp-

toms, it must be regarded as a dangerous condition. These cases may show every sign of abatement with the exception of a small amount of distention, and yet the peritoneal infection may be progressing slowly and fuminate only at a time when you are lulling yourself into fancied security, and the patient may die when his only hope is infinitely belated. Treating a case to the death for one thing and having the autopsy disclose another, is very discouraging and disconcerting, to say the least.

Another difficulty we have found besetting the examining surgeon in these young cases is, that the adhesions which form in the inflamed area in the child are much frailer, often extremely delicate, thus hampering the examiner in that he must exercise more care and patience in making the examination on account of the danger of rupturing the abscess and spreading infection to the surrounding peritoneum.

In the earlier days of its recognition, appendicitis was usually treated by the "watchful-waiting" method, delaying surgical interference in the hope it would clear up, which it sometimes did, but in others it only gave the abscess time to develop and rupture, causing a tremendous high mortality, largely unnecessary. This method of treatment rapidly fell into bad odor, which it justly deserved, but it also reflected upon the efficacy of surgery, as well, being often too late. It was this great mortality-rate which placed surgical interference upon a sure foundation.

Every hour of delay in making the diagnosis and in the time of operation is fraught with a certain amount of danger to the child, a danger so grave that we are led to believe it is better to make the mistake of operating at times when it is unnecessary rather than not to operate at all, as it subjects the average patient to less danger. Dr. Dorfer says that 30 per cent of those who recover under the waiting method have recurrences and must submit to operation sometime later, so, why not at first? Early operations are usually more easily performed with less consequent suffering.

There being no longer any question that surgery offers the very best hope of complete recovery in these cases, we are convinced that it should be done much oftener than it is. Some of these people are going to die under any method of treatment, but it is manifestly unfair to turn over a little moribund patient to the surgeon after his last best hope has fled. It is unfair to both the patient and the surgeon.

To summarize, we know—

That appendicitis occurs more frequently in children than is recognized.

That many children die from appendicitis under other names.

That foreign bodies and the like are not the immediate causes of appendicitis.

That concentrated toxins in contact with small area of mucous membrane is a more probable cause.

That appendicitis in children is more given to abscess-formation than in the adult.

That appendicitis in children is usually more fulminating than in the adult.

That early diagnosis and operation have lowered the death-rate.

That the diagnosis in children is hindered by certain obstacles not encountered in the adult, but which can be overcome by care, tact, and patience.

That the reparative process in children is very rapid, and recovery is complete in the cases operated on early.

That late operations in children are more fatal than late operations in adults.

SINUSITIS IN CHILDREN*

By KENNETH A. PHELPS, M. D.

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MINNEAPOLIS

Sinusitis in children is more frequent than was formerly supposed. Within the past few years interest in this subject has increased, with the result that several men have reported a series of 75 to 100 cases⁹ while a few years ago there were hardly that many cases on record.

The infectious diseases are the largest cause of sinusitis in children, and were 50 per cent of my series of 40 cases. Other causes are going in bathing, foreign body in the sinus, following the removal of tonsils and adenoids (Grove⁸ reports a series of them), following tooth extraction, from errors in development of teeth, and in the new-born from vaginal infection or birth-injury.

Once the sinus becomes infected any obstruction to its drainage determines the further course of the disease. Adenoids are the most common cause of the nasal obstruction in childhood, and are a very large factor in sinusitis in children.

The *x*-ray is recognized as a valuable aid in the diagnosis of sinus diseases in adults. It is still more valuable in children because a satisfactory examination of the nose is difficult, as is also the use of suction, the transilluminating lamp, and the pharyngoscope.

After studying the röntgenograms of the sinuses of 300 children, some 100 of which were taken in the anteroposterior position and others (200) in the Waters and Waldron¹ modified anteroposterior position, I believe much more information can be obtained from the latter position. By this method the maxillary sinuses are

not obscured by any superimposed shadows of the base of the skull. As the maxillary sinus is not large in young children it is important to have a clear plate, especially in the case of double infection. The ethmoid cells are projected lower than the frontal sinus, and the possibility of confusing ethmoid and frontal disease is reduced.

The three points given by Waters and Waldron in their technic are as follows: "First, the chin should always touch the plate; second, the long axis of the tube should be parallel to the plate; third, the nose of the patient should be from 1 to 1.5 cm. from the plate," depending on the type of face.

The development of the sinuses can be nicely followed by means of the *x*-ray. At birth the maxillary sinuses and ethmoids are present. There are a few cases of absent antra reported.⁴ The maxillary sinus is so small that its own mucous membrane fills the cavity. Its development is closely associated with that of the upper teeth and jaw. The plates of young babies show that it is internal to the orbit and its floor is above the floor of the nose. Plates taken at the age of three show the sinus floor below that of the nose; however, its development is not complete until after the second dentition. We were able to puncture the antrum in children five years of age beneath the inferior turbinate. In 35 per cent of our plates the two sinuses were found to be unequal enough in size to be of clinical importance, hence an *x*-ray should be taken before an antrum is punctured.

*Candidate's thesis, presented before the Minnesota Academy of Ophthalmology, June, 1920.

The ethmoids are so small that the interpretation of the *x*-ray findings is not always easy, still the *x*-ray offers more than any other method, since the cells are so small a slight congestion of the mucous membrane may cloud the area in the *x*-ray.⁷

In five of the plates which showed no frontal sinus the ethmoids were not seen clearly, but a faulty position, rather than the absence of the cells, may explain this.

The frontal sinus develops from one of the anterior ethmoid cells which ascends into the vertical position of the frontal bone. I have seen large frontals in a child five years old,⁸ and Haike⁵ reports a case at two and one-half. When the ethmoid cell reaches the level of the fronto-nasal suture it becomes the frontal sinus, clinically speaking.

In children the sphenoid must be taken laterally in order to show well. We found that taking plates by superimposing it through the orbit or the mouth is not successful, and the use of films above the soft palate is unsatisfactory. The same plate will also show the depth of the frontals, but it gives little information about the ethmoids or the maxillaries. While studying 72 plates of very small children the fact impressed me that the sphenoid in children is much larger than is generally supposed. I saw evidence of its being developed in children one month old. The solid body of the sphenoid throws a dense shadow, and within this shadow a brighter area is sometimes seen, which is the sphenoid cavity. This should not be confused with the brighter shadow presented by the cancellous tissue of the sphenoid body. The *x*-ray has decided limitations in children's sphenoids, and the clinical signs should be principally considered and the *x*-ray secondarily. Some plates show septa which divide the cavities anteroposteriorly. The entire cell appears within the cranial cavity.

The anatomy of the sinuses is most variable, probably more so than that of any other structure in the body. The size, shape, development, and location of the sinuses is very irregular; and in the same individual the two sides may vary greatly. Why this should be is not easily explained. The records of the cases seen show no relation between the high-arched palate, ozena, septal deformities, or pneumatic pressure and the development of the sinuses, which are advanced as causes by some. Our plates show the sinuses in the colored race to be larger than in the white.

The value of the *x*-ray is not disputed, but it

is not infallible in the diagnosis of sinusitis, and all the other methods should be used in conjunction with it. The *x*-ray may show a distinct clouding and the sinus not be diseased, but I have seen no case in which the disease does not produce clouding in the *x*-ray as Onodi suggests.³

Transillumination, always under rheostat control, is of value only in diagnosing antral and frontal diseases. The small sinuses and their variable anatomy make the *x*-ray a necessity to arrive at the correct interpretation in the child. In about 75 per cent of the cases examined the *x*-ray and transillumination gave the same results.

No external operation on the sinuses should be attempted without an *x*-ray plate, and it is of great aid in so simple an operation as a puncture and irrigation of an antrum.

A diseased sinus may produce local symptoms, or it may act as a focus and produce general symptoms. Every child with meningeal symptoms, an anemia, increase of temperature of unknown origin or with asthma or nephritis, pyelitis, arthritis, endocarditis, headaches, or long-standing colds, bronchitis, indefinite gastro-intestinal symptoms or cyclic vomiting, should be very carefully examined for sinusitis. The most frequent local symptoms are nasal discharge and headache. If it can be established that the headache decreases when the discharge begins or the headache is worse in the morning or on bending the head forward it is suggestive of sinusitis. None of my cases complained of severe headaches except those with a meningeal lesion. Usually the ache is not frequent nor common. Any child with a known sinusitis in which the headache does not improve on treatment should be watched carefully for signs of meningeal involvement. Sneezing is said to be a common symptom. Tenderness over the sinus, swelling of the eyelids or cheeks, and fistula in the upper or lower lid are suspicious signs of sinusitis. Two of our cases had a swelling of the forehead between the eyes, which was soft and not tender, yet was a subperiosteal abscess from a perforating sinus infection.

The rôle of the sinuses as a focus of infection is not so well established in pediatrics as it is in general medicine. More attention should be paid to this relationship, which will require a greater coöperation between the pediatrician and the rhinologist. In this connection Dean has shown that cultures from the sinus which acts as a focus usually show hemolytic streptococci.

Frequent Colds was the complaint in 19 cases, most of which were maxillary infections.

Bronchitis occurred in 8 cases, and was relieved in all by treatment of the sinuses.

Otitis media was present in 5 cases; 3 were cured, and their history extends over several years. The other 2 required mastoidectomies.

Nephritis. There was 1 case of acute nephritis, which cleared up after a sinus operation.

Bronchial asthma in two cases, both maxillary infections, and in both immediate relief followed the treatment of the sinusitis, but the relief was not permanent. We found no recurrence of the sinus infection, however.

Eye complications—3 orbital abscesses, 2 orbital cellulites with no pus found, on operation or post mortem. Five swelling of the eyelids, one an abscess of the lower lid, are in my group. Most of these complications were the first symptoms of the sinus disease.

Intracranial complications occur in children more often than is usually considered for the average case of meningitis is never examined for a sinus infection.

Palliative treatment is successful in the majority of cases when it is directed toward establishing drainage and ventilation. The use of oily and alkaline sprays, inhalations and nasal irrigations, together with suction and a weak adrenalin solution, will often relieve the condition better than an operation. Vaccines are used by some with success.¹¹

Should these measures fail the drainage should be increased by removing the obstruction, being

careful to destroy as little nasal tissue as possible. The tonsils and adenoids may be removed, and the anterior tip of the middle turbinate trimmed, but never removing the entire turbinate. These measures, like those above, are directed toward producing drainage through the natural orifices and should be tried whenever there is a reasonable chance of success.

In certain fulminating types and in cases not relieved by other methods a radical operation is indicated. This operation is the same as is done in adults, except that no external operation should be done on the antrum on account of interfering with the development of the teeth.

CONCLUSIONS

1. Chronic sinusitis occurs in children quite frequently and may act as a focus of infection.
2. The x-ray is the best method of diagnosing a sinus infection.
3. Most cases recover without any radical operation being performed.

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PRE-OPERATIVE CATHARSIS

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This paper is written primarily in reference to the pre-operative cathartic in relation to rectal operations, but, because of the general effect of a cathartic on the entire intestinal tract, it has a more or less pertinent bearing upon other operative cases. The majority of our surgical papers begin with "the night before the operation the patient was given cathartic." Unless there is a definite and generally accepted reason for this procedure then should we not ask, "Why is the cathartic given?" Is there any physiological or mechanical reason for it, or is it just "customary"? It is certainly time that results were

checked up as to whether the patient is benefited or whether, perchance, actual harm is done. Just what does a cathartic do? Primarily, it cleans out the intestinal tract, which is desirable. Secondly, as I will endeavor to show, it causes an increased gas-formation and depression, both of which are bad. It is generally conceded that following a brisk cathartic there is a feeling of well-being and exhilaration, which is soon followed by a period of depression and relaxation. This depression is of no moment in a fairly healthy individual, but in one who is ill and is to undergo an operation it is a different matter.

Everyone knows how bitterly some of the operative patients complain of gas pains and how even death may result from distention. Any one who has run the gamut of massage, eserin, pituitrin, stupes, enemas, etc., upon an already weak and exhausted patient is perfectly willing to dispense with this form of excitement. Distention of the intestines is due to several factors. First, the abnormal formation of gas, and, secondly, the lack of peristaltic power. This relaxation and lack of normal peristalsis are due to several conditions,—the opening of the abdomen, and the manipulation of the contents, the complete relaxation due to the anesthetic *and the relaxation following the primary stimulation due to the cathartic.*

In order to understand the increase of gas-formation let us outline the normal process of digestion. The food is masticated in the mouth and mixed with the salivary secretion, which partially converts the starch into maltose and dextrin. In the stomach the fats are partially emulsified, but little absorbed. The proteins and albuminoids are partially digested and partially absorbed, as are also the starches. Most of the fats and a goodly portion of the proteids and starch are then passed on onto the small intestine but partially digested. Here the pancreatic juice and bile, together with the secretion of the small intestine, practically complete the digestive process. The large intestines now receive the residue. In the large bowel there is little digestive secretion, and changes in the material passed into it are largely due to putrefactive processes, which affect chiefly proteids. We have then a general digestive process, each part of the digestive canal being prepared to receive the food *after it has been properly acted on by that portion of the digestive tract just above.*

Now, what happens when a cathartic is given? The food, which is normally passed through the alimentary canal tract in twelve to twenty-four hours, is rushed through the intestine in a much shorter time. The small intestine, instead of receiving a well-prepared food for its digestion, receives a food scarcely digested at all. In turn the large intestine, which ordinarily receives very little undigested residue, is insulted with a heterogeneous mass of undigested starch, proteids, and fats. What is the result of dumping such a mass of culture-material into a bacterially infected

tube of optimum temperature? Naturally, fermentation occurs, with the production of a large amount of gas, which the relaxed intestines pass with difficulty. So much for the general effects.

In rectal work there are certain local effects to be avoided, namely, the unnecessary soiling of the wound, post-operative hemorrhage, and pain. This is best accomplished by confining the bowels for three or four days following operation, thus allowing nature to build up her defenses against infection and to permit the sealing of the capillaries to become complete. This is certainly not well accomplished if the patient is constantly having to pass gas. The wounds are put on a stretch, thus encouraging bleeding. Fecal particles are carried down upon the freshly cut surfaces, all of which contribute to the patient's discomfort, if they do not actually menace the patient's life. Not infrequently the peristalsis and the straining required to pass the gas will also produce a bowel movement, which causes the same complications as flatus, only to a more marked degree.

Personally, I believe that the interest of the patient will be far better conserved if the cathartic is omitted or the patient is prepared according to the following plan: Seventy-two hours before the operation the bowels are cleared with castor oil, for this allows time for the period of excessive gas-formation to pass before the time of operation. In other words, the alimentary tract is unloaded and allowed time to return to its normal condition minus its load of digesting material. Following the ingestion of the cathartic only liquids or food that will leave very little residue is permitted. The evening before the operation the patient is given a high enema of normal saline solution. It should be so given as thoroughly to clean out the lower bowel, for frequently a poorly given enema does not do so. The following morning, two hours before the operation, a copious low enema of warm saturated boric-acid solution is given. This is the final preparation before the operation. After the operation the same diet is continued and 4 c.c. of tincture of camphorated opium is given every four hours. By this method the bowels may be confined for several days and undue gas-formation will not occur. At the proper time a saline cathartic and an enema of warm olive oil will insure a soft easy bowel movement.

THE JOURNAL-LANCET

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OBSERVATION HALLS FOR DEFECTIVES

Owing to a recent brutal murder which occurred in Minneapolis, and in which a young girl was murdered by an unknown assailant, some brilliant mind conceived the idea that it was the deed of a moron, a high-grade defective. And immediately there arose a hue and cry for some place where defective people could be segregated and observed, sorted out as it were: those that were dangerous to be sent to state institutions; those that were mild and free from guile to be taken care of until they were able to take care of themselves. It is hoped in this way to encircle a large number of people who are defective mentally and physically, and to prevent a possible revival of crime, such as has swept over this city, as well as all other cities in the United States. This, of course, is an iridescent dream, but it is quite in line with the attempts to house a large number of idiots, imbeciles, and higher-grade defectives under state care.

The State has a school at Faribault which is well equipped and well managed, and has done much educational as well as much medical work. The result is, that many of the high-grade defectives are returned to their families and become more or less useful helpers. But, unfortunately, these same defectives are very much inclined to inter-marry, and their progeny is very apt to acquire the inherent instability of the father or mother, or of both. But when we consider the

necessity of corraling all of the defectives in the state the number mounts up into the thousands, and at the present rate the school at Faribault can take care of only about eighteen hundred, and that school has been undergoing the process of building for thirty years.

That clinics should be established for the investigation of these people is well known, and such a clinic is really a part of the curriculum of the University Medical School and a part of the School of Sciences and Arts. But even these groups in a medical school under the University proper can examine but comparatively few children, and after they are examined there is no place in which to confine them. Someone suggested that a psychopathic hospital on the University grounds would be an ideal place for the observation of these people. That is hardly what is understood as a true psychopathic hospital, and the difference between the education of the defective and the care of the curable insane is so wide that there is no possible middle ground.

One interesting factor about the whole situation just now is, that for years when doctors have been called upon to pass upon the responsibility of an individual in court, and particularly in criminal cases where insanity or mental deficiency is the defense, they usually come off the stand ridiculed, their testimony disregarded by the judge and jury as men of narrow minds; and while they were perfectly sincere in stating that an individual on trial for his life, perhaps, held for assault or murder, was deficient, the jury, as a rule, regardless of whether he was an epileptic, or irresponsible, insane, or incompetent, send him to the penitentiary. Now these same legal minds are occupied with the probability of a moron, or many of them, roaming over the country causing death by assault. These same lawyers would be the first to recognize, in the present excited state of the people, the irresponsibility of the criminal, and would, if they could keep their heads long enough, have him declared insane and incompetent, and send him to a proper institution for care and treatment for the rest of his natural life. Perhaps after a time the psychiatrist and neurologist will be more honored for their opinions of the mentality and responsibility of the so-called criminal classes. Of course, doctors are frequently mistaken in their judgment, and sometimes a mistake costs a human life. On the other hand, the statesmen and governments of some countries are responsible for the loss of twelve million lives, and

yet no one pays much attention to that. But if a doctor makes a mistake or advises that a defective criminal be isolated and thus protect the public from his criminal tendencies, he does not get much sympathy from either the public or the court. The courts, of course, can not, have not, and will not take jurisdiction over the men who are responsible for the loss of millions of lives.

THE COURT OF DOMESTIC RELATIONS

The number of divorces on our court calendars is increasing in volume to such a degree that the courts are now seeking some method of relief, and they have decided that the "court of domestic relations" solves the problem,—that is, they have concluded that the time of a court should not be taken up with such miscellaneous matters, in which a judge is obliged to devote an entire day to listening to fifty or sixty divorce cases. Very naturally he feels that these cases ought to be more carefully investigated, and, if they could be assigned to one court, which had nothing else to do but listen to tales of domestic woe and to study the individual cases coming before it and the causes which lead up to divorce, it would not only be a practical solution of the problem, but it would be of wonderful medicolegal interest.

As we look back on the past a few years, and take into consideration the world's financial and civil warfare, it is not surprising that the family life has been involved in the whirlpool of disorder. When soldiers were enlisting, they and many young women concluded that, in order to be eminently patriotic, they should marry. The result is that many marriages were made in great haste, and the repentance has now covered a period of two or three years. These hasty marriages were followed, after the resumption of domestic life (when the military uniform was discarded for civilian clothing) by an entirely different outlook on the hopes and expectations of these young and foolish virgins. They found they were more or less embarrassed by conditions which arose from their brief honeymoon; that they were left more or less to the care of the Red Cross or other welfare committees, and that they were not able to regulate their activities. Then, when the husband returned, they found that he, too, had changed materially. Perhaps he came back with a psychosis or neurosis, or a physical disability, and that put another aspect of the case before the young bride, and she was

not infrequently unable to decide upon the proper course for the future. Then, too, the animal brutalities of men were brought out during the strenuous war period, and the husband perhaps vented some of his spleen upon his bride because he may have found that she was incompetent, or he did not realize that he was incompetent. Thus many divorces have followed. Here, again, is a living example of how morons and defective children come into the world. Hasty, improper, and illy suited marriages, and for what? Hasty, blind patriotism!

The question of diseases among the married people who seek for divorce is an important one, and doubtless will be given the fullest consideration, if courts of domestic relations are established, and here the examining physician should be a deciding factor. It is up to him to determine whether one or the other or both of these divorce-seeking souls are suffering from chronic, constitutional diseases which tend to upset the stability of the individual. It is up to him, too, to determine the truth or falsity of the venereal infections from which one or the other may suffer. These facts, doubtless, would cut a very large figure in the actions for divorce, and are important from this point of view, particularly, that neither of the contracting parties knew he or she had venereal disease, or concealed it, thinking they were cured. But when the real truth comes out as to the venerealization of the individual, it would probably constitute a suitable ground for divorce. However, it does not remedy the condition. The venereal infection may have been spread so that an innocent girl has contracted an incurable venereal pathology, or vice versa.

At all events, this "court of domestic relations" will be an excellent clinic for the study of many psychological problems which arise in domestic life. It will also interest the clergy, particularly, as most of the marriages are performed by clergymen, and in the majority of instances they have no absolute knowledge of the character of the contracting parties. The supreme interest, however, centers around the student of psychology and psychiatry, and, doubtless, he could clear up many of the domestic situations if he were given the opportunity. All physicians, of course, are brought into intimate relationship with the family and its domestic disorders, and not infrequently the doctor is the one who straightens them out and suggests ways and means that are really conducive to the happiness of the newly married. This is doubtless true, also, of many of

the older people who have lived together for many years, but who, for some trifling excuse, desire to be separated regardless of the relations of marriage. Here, again, the doctor can smooth over the pathway to more comfortable relations, at least, and in a measure prevent these ridiculous divorces from occurring among people who have been married long enough to know how to behave toward one another.

POLITICAL DELIRIUM

The old Chinese proverb is again brought into the foreground for your consideration: "Believe nothing that you hear, and only half that you see." If this be true, what are we poor mortals on this earth to do in the coming election? We have been advised, coerced, opportuned, and blasphemed from all sides and by all candidates, and may it be our good fortune to go to the polls and vote for someone on November second, and thus help to settle, in our small way, the destinies of the universe.

We are split into many factions, so many, in fact, that it would be impossible to catalogue them. We are promised all kinds of things by all kinds of candidates who are really looking after their own selfish interests. They have narrowed the issues down to such a fine point that the greater questions, which ought to be studied and discussed in the public press and on the platforms, have been relegated behind the scenery. And now that the women are in a position to vote equally with the men, the strain and the anxiety of the candidates must be intense, for no one knows, and no one can safely predict, who will be elected. No one knows how the women are going to vote; and mighty few know how the men will vote, because they are all going to vote on the sly.

Of course, a part of this delirium in which we are all indulging just now is the outcome of many strains, both financial and civic, as well as domestic and sentimental. Can you imagine, when you stop to consider these professional politicians, the strenuous life they lead in endeavoring to present a problem to the people, taking trains, and meeting friends, or making friends, if possible,—even if the smiles of hypocrisy are called into play,—jumping from town to town, and rushing into more or less crowded halls where they inhale the vile atmosphere generated by the unclean (from their teeth to their toenails), and trying to successfully present a different point of view. Not all these speakers

are constant. Some of them change their minds to meet their changing public audiences. And when this same thing is applied to all the candidates all over the country, who are hobbling or rushing about, how can they possibly keep their heads clear and present a subject logically or even intelligently? Then, too, consider the enthusiasm of the people, the calling of the herd by its leader, and the submission of clan to the dictates of some self-imposed advisor.

Many of our friends advance the argument, "We are tired of the present administration and want something different." This is a favor that is granted a free people, and undoubtedly they will make the most of their opportunity. A good many of them will say, "Where do we go from here?" And many more will say, after this rush is over, "Where do we eat?" But the country must be saved, even if the calliope does go up and down the street pounding out its "steam-whistle" music. We resort to almost anything to lead the crowd: Advertisements with pictures of candidates alongside that of your favorite tailor often decide a vote, for some of these life-like pictures, to the student of physiognomy, will help him select the kind of individual he wants to govern him for the next two or four years.

This political life is a good deal like the war. It brings out the trait of the individual candidate and voter, and, in the language of both, "It's a great life if you don't weaken!"

BOOK NOTICES

THE SURGICAL CLINICS OF CHICAGO. Volume IV, No. I (June, 1920). Philadelphia and London: W. B. Saunders Company, 1920. Published bi-monthly. Price per year: paper, \$12; cloth, \$16 net.

The advantages, in certain directions, of a magazine devoted entirely to a discussion of clinical cases actually presented, and described at the time of presentation, are clearly brought out by the perusal of these volumes. In the first place the review of each case is short, only the salient and important diagnostic points being brought out and the attention not diverted by unessentials. In the second place the steps of the operation are visualized because they are being executed, and the reader is almost deceived into thinking that he is actually seeing the operation; and this is especially true when the article is well illustrated, as many of these are. In the third place, because of the brevity, the number of cases in each volume is quite large, about 25, so that one is able to pick up, in an hour's reading, many valuable points, both in diagnosis and treatment, which are so presented that they leave almost as vivid an impression as if actually seen, and, therefore, they are liable to be retained in the memory for future use.

This is especially true of the volumes under present discussion. Because of the careful editing, there is very little dead timber, the case-reports being almost all by men whose work most of us feel well repaid for the trouble and expense of traveling to Chicago to see.

In Volume 3, No. 6, Bevan's case of lung abscess is most instructive.

Orth gives the dosage of x -ray and radium in cancer of the breast, and their frequency of application.

Straus describes his method of operating in cases of gastric and duodenal ulcers, substituting for gastro-enterostomy, which is not satisfactory, a plastic pyloroplasty, claiming by his method a much larger proportion of recoveries.

Harger, of the Cook County Hospital, points out the dangers from softening of the trachea in acute thyroid hyperplasia, and the safety of a local anesthetic over ether in operating in these cases.

David presents a case of fecal incontinence from prolonged packing following incision of ischiorectal abscess, with operation for curing this condition.

Watkins discusses sterility, and its successful treatment by dilatation and administration of corpus luteum extract.

Kretchmer, in a discussion of ureteral calculi, brings out several valuable points in their diagnosis and management, such as shifting the tube in making a double skiagram, the value of intra-ureteral treatment, which should always precede open operation, and the necessity of taking a skiagram to locate the stone just before operating, because of the liability of the stone's shifting its position, as defined by a previous x -ray.

In this Volume IV, No. 1, Bevan presents four very interesting conditions: (1) bronchial cysts; (2) intestinal obstruction from carcinoma, in which he recommends a preliminary cecostomy; (3) imperforated anus with communication of the rectum and bladder; and (4) a gauze sponge resident in a gall-bladder for eleven years.

Eisendrath gives in detail the method of femoral herniotomy by the inguinal route, well illustrated.

Gatewood, at the Presbyterian Hospital, discusses esophageal stricture, and gives the technic of dilatation.

Strauss, at the Michael Reese, operated on two cases of pyloric stenosis by his modification of the Ramsted method. He also discussed the symptomatology, etiology, and methods of diagnosis of this condition.

E. L. Cornell, at Provident Hospital, performed a Cæsarian section by the Kronig method, giving the steps, in detail, and discussing the reason for preferring this method over the classic one in certain cases.

H. B. SWEETSER, M. D.

PRINCIPLES AND PRACTICE OF PHYSICAL DIAGNOSIS. By John C. DaCosta, Jr., M. D., Ex-Associate Professor of Medicine, Jefferson Medical College, Philadelphia. Fourth edition, thoroughly revised, octavo of 602 pages with 225 original illustrations. Philadelphia and London: W. B. Saunders Company, 1919. Cloth, \$4.75 net.

The demand for four editions and three reprints, within twelve years, of this text-book proves its value. It is particularly adapted for third- and fourth-year medical students, but is an excellent reference book for practitioners, among whom it is popular.

The more important additions to this edition concern, chiefly, the lungs, including hilus tuberculosis,

gas edema, gas pneumonia, and influenzal pneumonia; and of the heart the effort syndrome, functional capacity, aviator's heart, and sino-auricular block. The symptomatology and physical signs of cecum mobile are presented somewhat in detail.

The newer technical methods of physical examination especially, sphygmomanometry, those relating to intradural pressure, and the determination of the cardiac reserve force are described from the standpoint of the clinician.

The book successfully attempts without cumbersome detail to present the principle of physical diagnosis in the study of thoracic and abdominal diseases. There is a practical application of clinical anatomy to the nature of physical signs and throughout a careful grouping of the pathologic states with the physical effects. Laboratory information, when applicable to particular lesions, is discussed therewith, but not given in detail. The graphic illustrations are in the main original.

It is to be regretted that the author did not use the newer classification of râles as adopted by the United States Army and the National Tuberculosis Association, but these are minor differences that in no way detract from the worth of the author's accurate description of them.

—F. W. WITTICH, M. D.

HUMAN PARASITOLOGY, with notes on Bacteriology, Mycology, Laboratory Diagnosis, Hematology and Serology. By Damaso Rivas, M. D., Ph. D., Assistant Professor of Parasitology and Assistant Director of the Course in Tropical Medicine, University of Pennsylvania. Octavo volume of 715 pages with 422 illustrations and 18 plates, most of which are in colors. Philadelphia and London: W. B. Saunders Company, 1920. Cloth, \$8.00 net.

This volume is one of the most complete, but concise, works published on human parasitology. The author gives a brief history of the subject and then systematically discusses the various human parasitic infections according to the usual zoological classification.

The Fungus infections are described in a separate section, and an appendix reviews the commoner macroscopic and microscopic methods.

The treatment of even the common parasitic diseases is too briefly described to be of value. The work, however, is more of a laboratory manual for the identification and classification of the parasite.

Numerous illustrations, tables, and an extensive bibliography are exceptionally good.

The book should be in every teaching and reference library.

E. L. GARDNER, M. D.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Etc. By Leading Members of the Medical Profession Throughout the World. Edited by H. R. M. Landis, M. D. Volume II. Thirtieth Series, 1920. Philadelphia and London: J. B. Lippincott Company.

1. Ashhurst, of the University of Pennsylvania, discusses tuberculosis of bones and joints. He outlines methods of examination for detecting hip and vertebral lesions, and warns against being misled by referred pains to other regions than those effected.

2. Cumston, of the University of Geneva, Switzerland, writes interestingly on a number of surgical topics, including the pathology of cysts of the spleen,

diagnosis of perforation of duodenal ulcer, and technic of nerve anastomosis.

3. MacKechnie, of the Chicago Postgraduate School, demonstrates two operations, explaining his operative technic and the preparation and after-care of the patient.

4. A careful study of the cases of influenza and pneumonia in children seen at the Cook County Hospital is made by I. M. Levin, of the University of Illinois. He found no increase in the incidence of pulmonary tuberculosis following the 1918-19 epidemic.

5. Seifert, of Chicago, reports a unique case of ectopic pregnancy with a comprehensive review of the literature.

6. Thompson, of Hot Springs, Arkansas, classifies and describes the skin lesions of syphilis. Photographs are shown of each kind.

7. Georges Bachy, of St. Quentin, France, discusses the difficulties and dangers of cholecystectomy during an acute attack of cholecystitis.

8. Leon A. Bailly, of Marseilles, France, has collected seventeen cases from the literature to add to one of his own of occlusion of the arteries of the limbs in diphtheria, ending in gangrene.

9. Otis, of Tufts College, tells how he teaches the subject of pulmonary tuberculosis to the medical students.

10. The 1918 influenza epidemic is described in relation to numerous isolated Western communities of the U. S. Reclamation Service by Hugh Arbuthnot Brown, of Washington, though he draws no conclusions from the collected reports.

11. B. B. Vincent Lyon, of Jefferson Hospital, Philadelphia, continues a paper begun in a previous number on the treatment of gastric crises, accompanied by detailed case-reports.

12. Fractures, nerve injuries, and adhesions of tendons in scar tissue are presented in concise but adequate case-reports with photographs of patients, röntgenograms and apparatus for treatment in a paper on industrial medicine by Paul B. Magnuson and John S. Coulter, of Chicago.

13. In the surgical division, John Speese, of the University of Pennsylvania, reports several unusual conditions occurring in children,—an omental cyst with twisted pedicle, lymphangioma of axilla, congenital elephantiasis, and a case in which the jejunum was ruptured by a blow on the abdomen.

14. The details of the preparation, technic, and after-care in operating on hemorrhoids under local anesthesia are given by Charles J. Drucek, of the Chicago Medical School.

15. In the division of pediatrics W. L. Treadway, of the U. S. P. H. S., writes of mental hygiene and its importance in the pedadolescent age,

16. A. Levinson, of the Northwestern University, describes the psychology of the sick child by contrasting it with that of the normal child.

17. Obstetrics is represented by Francis J. Browne, of Edinburgh, who follows the cases presented by Dr. Ballantyne in a previous volume from the Antenatal Clinic. Dr. Browne gives the subsequent histories of some of these cases, as well as of some of his own, telling of working out of the problems found by antenatal examination in the Maternity Hospital.

18. James J. Walsh, of the Fordham University School of Psychology, writes of nervous exhaustion.

He thinks that the endurance of the soldiers through the hardships of war show that the normal nervous system does not develop a psychosis from exhaustion, but that a constitutional tendency to a psychosis may be fostered and emphasized so that the patient may break down under strain.

OLGA HANSEN, M. D.

NEWS ITEMS

Dr. J. A. Lepak, of St. Paul, was married last month.

Dr. A. I. Arneson has moved from Emmons to Austin.

Dr. C. K. Onsgard has moved from Rushford to Halstad.

Dr. A. Eagon has moved from Fulton, S. D., to Rockham, S. D.

Dr. T. J. Deveraux, of Aberdeen, S. D., has moved to Minneapolis.

Dr. O. S. Watkins, of Carlton, will spend the winter in Billings, Mont.

Dr. George J. Hanley has moved from Ellensdale, N. D., to Churches Ferry, N. D.

Dr. H. J. Putney, of Great Falls, Mont., has been in the East doing post-graduate work.

Dr. Sadie L. Jacobs, of Miles City, Mont., has been doing postgraduate work in the East.

Dr. R. D. Campbell, of Grand Forks, N. D., has been doing postgraduate work in Chicago.

Dr. E. C. Haagenon, of Grand Forks, N. D., has been appointed health commissioner of that city.

Dr. Paul D. Berrisford, of St. Paul, was married last week to Miss Mary G. Kilty, of Stillwater.

Dr. J. P. Chance has resumed practice in International Falls, having resigned from army service.

Dr. S. H. Anderson, of Wells, was married last month to Miss Evelyn Thompson, of Preston.

Dr. Herbert P. Sawyer, of Goodhue, was married last month to Miss Minora Backman, of the same place.

Drs. Locken, Holte, Gordon, and Mitchell, of Crookston, have formed a clinic for work in group medicine.

Dr. Harry B. Zimmerman, of St. Paul, was married last month to Miss Mary R. Prince, also of St. Paul.

Dr. Boynd M. Williams, of Minneapolis, was married last month to Miss Victorine J. Majerus, also of Minneapolis.

The Woman's Auxiliary of the Hennepin County Medical Society celebrated their tenth anniversary last month.

Dr. A. W. Guest, of Jamestown, N. D., has been appointed temporary superintendent of the State hospital in that city.

Dr. William Black, of the Holbrook-Sohmer Clinic, of Mankato, has been doing postgraduate work in Chicago for the past two months.

Dr. C. W. Kanne, who has practiced in Arlington for twenty years, has moved to Faribault and will specialize in obstetrics and gynecology.

At the annual meeting of the Phi Beta Pi medical fraternity, held in Boston last month, Dr. W. A. Fansler, of Minneapolis, was elected Supreme Editor of the fraternity.

Dr. James McKeon, who has practiced in Montgomery for thirty years, has moved to St. Paul, where he will continue to practice. Dr. McKeon is a graduate of Bellevue.

Drs. F. R. Metcalf and C. R. Stanley, of Fulda, have joined Drs. O. B. Mork and F. G. Watson, of Worthington, in the formation of the Worthington Clinic at Worthington.

Dr. Alonzo P. Williamson, who practiced in Minneapolis for a number of years and who went to California twelve years ago, died last month in Santa Monica, Calif., at the age of 66.

Dr. R. G. Olson, whose removal to Minneapolis, we noted in our last issue, has become associated with Dr. H. A. Beaudoux in eye, ear, nose, and throat work, with offices in the La Salle Building.

A St. Paul paper announces that the Ramsey County Medical Society will give a "Clinic Week" this fall and that 1,500 doctors are coming to it. The daily paper knows how to do up the medical news handsomely.

The position of Executive Secretary of the Minnesota Public Health Association, made vacant by the resignation of Dr. H. W. Hill in July, has been tendered to Dr. F. E. Harrington, Health Commissioner of Minneapolis.

Dr. Albert L. Peterman, of Parker, S. D., died last month at the age of 68. Dr. Peterman was a graduate of the College of Medicine of the State University of Iowa, class of '77. He was one of the pioneer physicians of the state.

Dr. A. R. Varco, County and City Health Officer of Miles City, Mont., has returned from New York and Chicago, where he has been doing postgraduate work. He took a course in *x-ray* work in the Cook County Hospital in Chicago.

Dr. G. L. Jaquot, who has practiced in Ivanhoe for a dozen or more years, has become associated with Drs. A. L. Vadheim and C. M. Golden, of Tyler, to which place he will remove the first of the year. He will specialize in eye, ear, nose, and throat work.

Dr. Walter L. Mattick, who has been in charge of the Tuberculosis Sanatorium at Deerwood for the Counties of Aitkin and Crow Wing for the past two years, resigned last month to accept a position with the Muirdale Sanatorium of Wauwatosa, Wis.

There was a large attendance of northwestern surgeons at the annual meeting of the American College of Surgeons, held in Montreal, Canada, last month; and an unusual number of northwestern men were admitted to membership. We hope to publish the names of these men in our next issue.

The Southern Minnesota Medical Association will meet in Mankato on the 29th and 30th of this month, and will present a program equal, if not superior, to the program of any of our State Association meetings. This association is, indeed, a model one, due, in no small part, to an efficient secretary.

Mr. G. W. Olson, who has been superintendent of the Swedish Hospital of Minneapolis for the past nine years, has resigned to take charge of the management of the Physicians and Hospitals Supply Company. Mr. Olson has been noted as one of the most efficient hospital superintendents in the country, and cannot fail to make a success of his new enterprise. Mr. William Mills has been appointed acting superintendent of the Swedish Hospital. Mr. Mills has been assistant superintendent of the hospital for a year or so.

At its annual meeting, held last month in Duluth, the St. Louis County Medical Society expressed its decided opposition to health insurance, common in large corporations and companies, and will seek legislation to discourage it. The following were elected officers of the Society: President, Dr. E. Z. Shapiro, Duluth; first vice-president, Dr. R. L. Burns, Two Harbors; second vice-president, Dr. L. N. Morsman, Hibbing; secretary and treasurer, Dr. R. S. Forbes, Duluth; delegates, Drs. C. L. Haney and

O. W. Parker, Duluth.

TWO ENGINES FOR SALE.

One electric engine in good condition, \$80.00, and one foot engine for \$10.00. Address Dr. L. R. Sweitzer, 607 Lowry Building, St. Paul.

OFFICE FURNITURE FOR SALE

1 McDonald Examining Chair, leather upholstery. \$50.00
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In Southwestern Minnesota, an unopposed \$10,000 general practice in modern town of 700. Large territory; thriving community; good roads; collections 99 per cent. Residence and office combined, \$3,200. \$800 cash, balance to suit. If you want plenty of work and a good location, write for further information. Address 408, care of this office.

LOCUM TENENS WANTED—PARTNERSHIP
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I want a young man to take charge of my practice in a town of 3,000 in Central Minnesota, with partnership in view. Practice will exceed \$15,000, and will soon reach \$20,000 or more a year. Address 405, care of this office.

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WANTED

A woman who can do the x-ray, laboratory work, and give anesthetics in office and hospital, is wanted in one of the smaller cities of the state. Address 402, care of this office.

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A well-known Minneapolis firm of eye, ear, nose and throat specialists want a young man as assistant. Splendid opportunity to advance in this specialty. Prefer an unmarried man, and must be licensed in Minnesota. Salary will be made satisfactory at all times. Address 394, care of this office.

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Dr. Harrington is a pioneer in *x*-ray therapy and diagnosis, and his laboratory has sufficient radium for the treatment of ordinary cases.

The laboratory is situated in Suite 506, Donaldson Building, Minneapolis, and Dr. Harrington will furnish any desired information concerning its work.

PHYSICIANS AND HOSPITALS SUPPLY COMPANY

It was a matter of much regret to physicians and hospitals throughout the Northwest that the Standard Medical Supply Company went into a receiver's hands last April. This concern had built up an extensive business and gave a service which thousands of customers, large and small, had learned to depend upon for their daily needs of supplies of various kinds. The regrets were, therefore, not only over the money loss to the physicians and others who had invested in the concern, but also, and almost as much, over the resulting inconvenience in having to go elsewhere for many items of supplies. The Standard Company aimed to be a co-operative enterprise, owned by members of the medical profession. As such it was not a financial success. It foundered on the rocks of insufficient cash capital, excessive overhead expense, and absence of individual risk on the part of the management,—just another illustration of the futility of efforts at co-operation on the part of professional men in business enterprises.

It is cause for gratification that the failure of the Standard is not going to result in leaving this section of the country without a medical and hospital supply house. The organization of the Physicians and Hospitals Supply Company, recently incorporated under the laws of Minnesota, insures the continuation of the business established by the former corporation and its de-

velopment along progressive lines. The new company is backed by a few men who realize the needs of this territory and have the capital, courage, and experience to meet these needs in a broad and generous way. They have faith in the future of Minneapolis as a medical center and believe that this city offers the best possible opportunity for the development of a manufacturing and jobbing concern producing and dealing exclusively in strictly ethical products. It is evidence of the progressive spirit of the new organization that a successful hospital executive has been chosen to direct its affairs. Mr. G. W. Olson, well known as the superintendent of the Swedish Hospital of Minneapolis, will be the general manager of the Physicians and Hospitals Supply Company.

The new concern is installing its manufacturing equipment and stocks at 413 Sixth St. South, a location convenient to physicians' offices and the hospitals of the city. An extensive line of surgical instruments and miscellaneous supplies will be carried, well arranged and displayed in a store that will be a credit to the profession to which it caters and to the management of the enterprise.

INTRAVENOUS MEDICATION

"The superiority of the intravenous method of administering salvarsan over the intramuscular method, was so evident that the latter has practically been abandoned. Several years of experience with several thousand intravenous administrations of various standard remedies permit me to state that, when solutions are properly prepared, it is a safe and practical procedure. There is greater tolerance for various remedies, since even large doses fail to provoke undesirable disturbances, as they do when given by mouth. The method is more scientific, for the reason that it affords opportunity for more accurate observation of the responses of physiological processes, while the results are positively more certain and uniform."

The above words are from the pen of Dr. Albert C. Geyser, a distinguished physician of New York City, and are taken from the *American Journal of Clinical Medicine* of May, 1920.

Dr. Geyser emphasizes the fact that intravenous medication is not only safe, but is less harmful than medication by mouth, which so often causes stomach disturbances that are worse than the disease treated.

Intravenous medication is well-nigh universal in present-day medicine, and it has been rendered safe by laboratory investigators, notably by the New York Intravenous Laboratory, of 100 W 21st St., New York City, whose line of intravenous preparations is large and dependable.

A postal card will bring reprints of this and other articles that have appeared in reputable journals on this subject, together with a list and description of their solutions.

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The medical profession's indorsement of Platt's Chlorides as a wholly dependable disinfectant is seen in their constant use of the same for nearly 40 years. The preparation is odorless, strong, non-poisonous, thus making it exceedingly desirable as a routine disinfectant for the home and the hospital; it is also inexpensive, which makes it all the more useful in the home where it should be put to daily use.



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Puffed Wheat

Puffed Rice

Corn Puffs

AROMATIC CHLORAZENE POWDER

Influenza may or may not be rampant this winter, as it was last year and the year before. It is probable, however, that the disease will make its appearance again, as forecasted. We shall see. The one thing we may be sure of now is that there will be plenty of rhinitis and other manifestations of localized infection affecting the upper respiratory tract, including the sinuses. To the lay person they are "colds," distressing more or less, causing some malaise and some fever along with the local symptoms and showing evidence of being transmissible or epidemic.

In view of this the newer Dakin chlorine compounds will interest us, as applied to the nose and throat for the purpose of disinfecting these passages against disease germs. Whether effective against the development of the influenza organism is questioned by some, but against the milder agencies concerned in epidemic winter colds, it is fair to assume that much good may come from the use of germicidal solutions so employed.

Aromatic Chlorazene Powder serves well for washing out the nasal and oral passages. It contains the chlorine compound to the extent of 5 per cent, with desirable alkaline sodium salts and eucalyptol added. Freely soluble in water, fluids for douching or spraying are readily made as they are needed. Its germicidal value is not a fancied one. Weight for weight, this powder is about two and one-half times stronger than phenol. Hence, for office treatment in catarrhal conditions generally affecting the nose and throat, Aromatic Chlorazene Powder is a most satisfactory re-

course. The Abbott Laboratories, Chicago, will supply it. A sample vial may be had by those who care to try it out.

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This thought is suggested by the appearance in our advertising section, this issue, of a unique announcement from Parke, Davis & Co., entitled "Adrenalin in Medicine," which every medical practitioner should read. It deals with the physiological action of the medullary suprarenal principle and reflects a clear light upon a subject concerning which much misinformation persists, even in medical circles. This, we understand, is the first of a series of short essays that will have to do with the scientific aspect of the subject rather than its commercial features. Others will include discussions of "The Treatment of Asthma"; "The Treatment of Shock and Collapse"; "The Treatment of Hemorrhage"; "Adrenalin in Combination with Local Anesthetics"; "Adrenalin in Organo-therapy."

These topics appeal strongly to the progressive physician who seeks to be well informed. New facts are being constantly developed in the domain of endocrinology; and as this series of concise "talks" will cover the field pretty thoroughly, in so far as Adrenalin is concerned, it will be well worth while to review them.

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The "Spa" of Minnesota is not a whit inferior in its curative results to the "Spa" of Europe or Mexico, although it is not so far away from the Twin Cities, in fact it is only a score of miles from St. Paul and Minneapolis—it is at Jordan, Minn., and its name is given in the caption of this notice.

The line of ailments that find almost instant relief in the baths given at Jordan is known to all physicians, and yet not a few well-informed medical men are incredulous. Now, the truth is, the Jordan institution, like such "Spas" the world over, gives relief to some very obstinate cases and cures very many, while never—not in a single instance—doing harm.

It is really worth while to send an occasional patient to Jordan, and learn what their baths will do.

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The continued production of this high-grade Digitalis by a Minnesota man will be a source of satisfaction to those physicians who rely on this important drug for definite therapeutic results.

We are informed by Mr. Upsher Smith that the 1920 crop has now been harvested and is now in process of preparation and standardization. Arrangements have

been made for the biological assays to be conducted by one of America's foremost pharmacologists.

To our readers we would suggest that in specifying Capsules Folio Digitalis (Upsher Smith) they will be assured of the maximum potency, prompt action, and uniform dependability.

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It has been said that The Youth's Companion has had more readers per copy than any other publication in America. There is good reason to believe this to be true. But the important thing is that the influence of the paper upon its millions of readers has always been directed to building character, "East, west, home's best," has been its unuttered slogan. In its articles, editorial and otherwise, it has dwelt upon the importance of good citizenship. In all its contents it has aimed to give not only entertainment, but "stepping-stones to higher things."

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The Official Journal of the

North Dakota and South Dakota State Medical Associations

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MINNEAPOLIS, NOVEMBER 15, 1920

No. 22

A CASE OF HEMORRHAGE OF THE PONS VAROLII AND MEDULLA OBLONGATA: A CLINICAL REPORT*

By G. M. WILLIAMSON, M. D.

GRAND FORKS, NORTH DAKOTA

So far as I can learn, pontine hemorrhage is rarely found, for it is difficult to diagnose it from other forms of cerebral tumors lying near the pons, and, unless an autopsy is made, it is easily overlooked.

REPORT OF A CASE

The patient, Mrs. G. S., a married woman aged 35, the mother of three healthy children, being at the time pregnant since March 1, came to my office on June 27,

plained of feeling sleepy and lacking ambition. About June 8 she felt a numbness in the fingers of the left hand, which gradually moved up the arm. About a week later the same sensataion appeared in her left toes and foot, creeping up the leg. She was very positive regarding these creeping sensations, and apparently marked their progress from day to day. She had no pain or sick feeling at any time except, rarely, a slight nausea in the morning, which was attributed to the pregnant state. Her appetite was good, sleep undisturbed, and bowels regular. On examination I found nothing

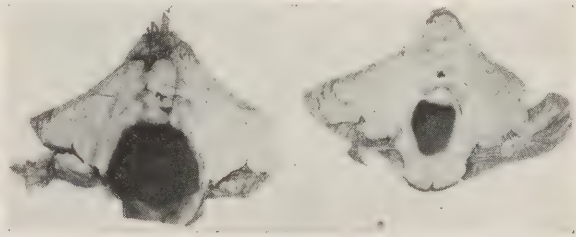
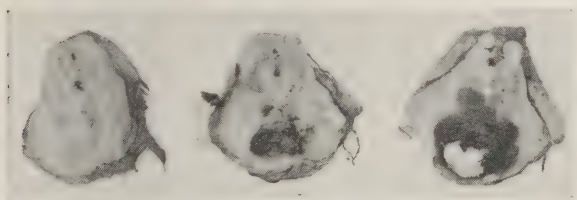
Sec. 1

Sec. 2

Sec. 3

Sec. 4

Sec. 5



1. Section obliquely through the mid-brain posteriorly and the upper part of the pons anteriorly, near the nucleus of the 3d nerve. The hemorrhage does not appear in this section, but would show on under surface.

2. Section parallel to Sec. 1, about 3 mm. lower, near nucleus of the 4th nerve. The basilar portion of the pons shows the hemorrhage-infiltrating tissue.

3. About 3 mm. lower than Sec. 2. The middle peduncles show; also the tips of the inferior quadrigeminal bodies. Hemorrhage is extensive in all of the central basilar portion. Part of clot has dropped out, as shown in the photograph.

1919, complaining of numbness and tingling in her left hand and foot. She described the sensation as if rough sand-paper were being rubbed over her fingers and up the arm.

History—She had always been healthy, had an attack of influenza in November, 1918, lasting about two weeks. Since that time she has not felt first-class, and has com-

4. About lower part of the pons anteriorly, section cut obliquely, so that the pons is shown slightly below its widest part, about the level of the nucleus of the 5th nerve and a little above the nuclei of 6th and 7th nerves. The most extensive hemorrhage appears at this point.

5. Section obliquely through the medulla, mid-level of the posterior part of the pons, and more widely through the cerebellum. Hemorrhage and extensive in the tegmental portion. (Note reduced size of fourth ventricle, due to pressure of the clot on the floor.)

abnormal. The heart, lungs, and kidneys were normal; pupils, equal; and reflexes, normal. There were only the subjective symptoms of numbness and tingling in the left arm and leg. She returned to her home, and her husband kept me informed regarding her condition, which remained the same, with the exception of the creepy sensation going further up the arm and the leg, until July 14, about two weeks after her first visit to my office, when he reported that she was seeing double.

*Presented at the thirty-third annual meeting of the North Dakota State Medical Association, at Minot, June 15 and 16, 1920.

I insisted that she be taken to the hospital for further observation. She was admitted July 15. On admission she looked a perfectly healthy woman; pulse, 72; temperature, 97.8°; respiration, 20; blood-pressure, 120. The heart, lungs, and kidneys were normal. The urine was examined at different times during her stay in the hospital, and was always found normal. The pupils were equal and active. There was marked weakness of the left arm and leg, causing her to walk unsteadily; the reflexes were slightly exaggerated on the left side; she also was suffering from diplopia, which developed a few days before coming to the hospital; she had no headaches or pain.

She remained in the hospital until July 23, during which time she seemed to improve, and she insisted on

very feeble; there was slight drooping of the left eyelid; the pupils were equal, and optic discs normal. There was paralysis of the right external rectus muscle; she was unable to look to the right. The knee-jerk was exaggerated, and the tactile sensibility and the sensibility to pain in the left arm and leg were very much diminished. She complained of giddiness at times and of headaches.

After this examination I came to the conclusion that the lesion was in or near the right side of the pons, about the level of the sixth nerve; and I gave an unfavorable prognosis. The nature of this lesion was somewhat problematical. The condition was not one of long standing, about four weeks altogether; there had been no headaches, giddiness, or marked vomiting, up to the time of this severe vomiting spell, on July 29. The optic discs were normal. This was not very typical of cerebral tumor, and, taking into consideration the condition of the kidneys, heart, and blood-pressure, did not favor cerebral hemorrhage.

Progress of the Case—July 31, the patient seemed very dull, left eye turned slightly outward, urine voided with difficulty. There was considerable cough on account of mucus in throat. August 1, patient's general condition was worse. She was unable to void urine, and from this time had to be catheterized; hearing was dull, and speech seemed thick; complained of giddiness; had trouble in keeping the throat clear, due to paralysis of the muscle of the throat. August 2, condition unchanged except she seemed more restless. August 3, patient was very restless, and there was almost complete paralysis of left arm and leg, breathing seemed labored, vomiting considerably, hearing very dull, and she talked with difficulty. The throat filled with mucus, and the patient had trouble in swallowing. August 4, condition worse; patient very weak, and restless; breathing labored and shallow at times; complete paralysis of left arm and leg; was unable to swallow. Pulse was weaker and more rapid; patient semiconscious. August 5, patient seemed brighter in the early morning for a short time, then became unconscious; respiration, labored; pulse very weak. She gradually failed, and died about 5:00 A. M., August 6.

POST-MORTEM EXAMINATION

This was made August 6. Permission to examine the brain only was granted. The membranes and exterior of the brain and the great vessels at the base were normal.

Sections were made at various levels. Nothing abnormal was found until a section through the upper part of the pons revealed a dark spot a little to the right side; further sections showed this dark spot, which proved to be a blood-clot, growing larger and extending from the top of the pons almost to the bottom of the medulla, practically filling it from top to bottom. At the upper limit of the hemorrhage it appeared to be more on the right side, the remainder being more central.

Dr. A. G. Long, director of the Public Health Department, University of North Dakota, who very kindly made the autopsy, also examined sections, in order to determine, if possible, the cause of this hemorrhage. Such a condition is suggestive of a possible glioma, but he reports that no sign of a tumor could be found and that there was nothing in the specimens examined to indicate the cause of this hemorrhage.



6. Showing sections through mid-brain, the pons varolii, and the medulla oblongata. The cerebellum shows in all, slightly in 1 and extensively in 4 and 5.

going home, for she felt very much better. I reluctantly gave my consent. I was not yet satisfied regarding the diagnosis, but before leaving the hospital took a specimen of blood for a Wassermann, and gave a saturated solution of potassium iodide, with instructions as to dosage. I might say that the Wassermann was negative.

Her condition remained unchanged until July 29, when she was taken with a violent attack of vomiting, the attack lasting about two hours and it left her in a very weakened and depressed condition. I saw her next day, and sent an ambulance to convey her again to the hospital. At this time I gave the husband an unfavorable prognosis. Examination at the hospital showed her general condition to be very much worse. She appeared dull and listless; temperature, pulse, respiration were normal; blood-pressure, 120; and urine, normal. The movements of the left arm and leg were

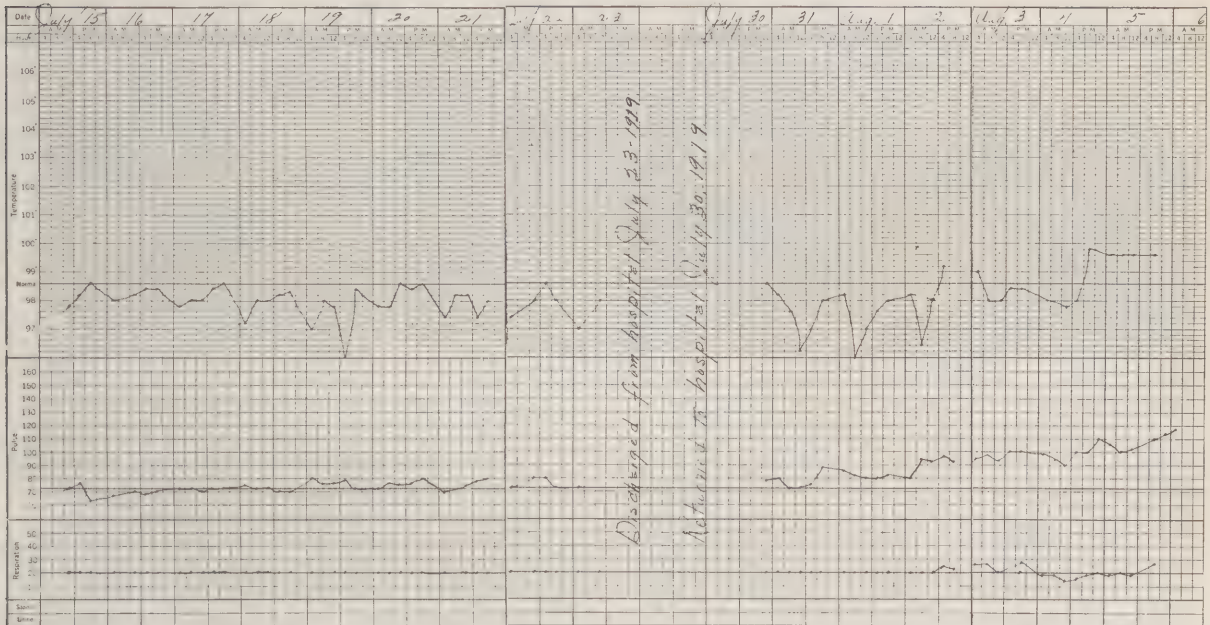
The case seemed unusual to me, and, as I said in the beginning, would no doubt have passed without a definite diagnosis, had not an autopsy been made. The conclusion drawn after the autopsy was, that apparently in the beginning a small hemorrhage occurred into the pons, causing the first symptoms of numbness and tingling, then slowly infiltrating the tissues. Further symptoms of diplopia and weakness of the left arm and leg occurred, then remained quiet for about two weeks, when a more extensive hemorrhage took place, completely filling the pons and most of the medulla, taking about a week to do this. The patient complained of no particu-

bottom of the medulla oblongata; in which, after a small primary hemorrhage that occurred three weeks before, such an extensive hemorrhage as was present in this case slowly and gradually occurred, taking a week to reach its full development, and in which up to, practically speaking, the time of death there was no unconsciousness."

[A series of sections, showing position of hemorrhage, were thrown upon the screen by the essayist.]

DISCUSSION

DR. H. E. FRENCH (Grand Forks): When Dr. Williamson came out to the University a few days ago and showed me his paper and his pictures, I brought out a



Temperature Chart. Hemorrhage Into the Pons Varolii and Medulla Oblongata

lar pain and remained conscious until a few hours before death.

Dr. Byrom Bramwell, Edinburgh, Scotland, in his "Clinical Studies" of 1909, reports an exactly similar case under the heading, "Remarkable Case of Hemorrhage of the Pons Varolii and Medulla Oblongata," which in all respects is an exact counterpart of the case here reported; and in his remarks after reviewing the history of his case, he says, "The case is a very remarkable one; indeed, in my experience it is unique."

"I do not know of any other case in which a hemorrhage slowly and gradually infiltrated the tissue of the pons varolii and medulla oblongata, and in which the hemorrhage ultimately extended from the top of the pons varolii to the very

few stained sections of the normal human brain-stem for comparison. The Doctor was kind enough to insist that I bring my slides to the meeting and take part in the discussion.

[Dr. French then had a series of Weigert-stained sections of the brain-stem thrown on the screen. He pointed out briefly the various tracts and nuclei, the "vomiting center," the floor of the fourth ventricle, the fourth ventricle, and other features. He indicated what parts of the normal sections were involved in Dr. Williamson's series, and called attention to the much reduced size of the fourth ventricle, due to the pushing back of the floor by the lesion, speaking very briefly of some of the symptoms that might be supposed to accompany a lesion such as that described, and pointing out the anatomical relations that explain the chief symptoms reported.]

DR. FRED EWING (Kenmare): It is useless for me to

try to add to Dr. Williamson's and Dr. French's remarks. The average man who listens to work in the nervous diseases does not understand so clearly about these things. The thing that strikes me is how definite is the location of the lesion in a case like this, giving these symptoms.

Another thing was the fact of the almost complete absence of symptoms early in the case, which we

usually associate with cerebellar hemorrhage, such as projectile vomiting, choked disc, and so on.

I wish the Doctor could give us something more about the etiology, but I suppose he is in the same situation as we are. It seems unusual that with no kidney or heart lesion we should get a slow hemorrhage that would not yield to treatment.

I am sure we appreciate his paper very much, but I cannot add anything to it.

DETERMINATIONS OF GASTRIC ACIDITY FOLLOWING GASTRO-ENTEROSTOMY*

By P. A. WHITE, M. D.

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ROCHESTER, MINNESOTA

This problem was undertaken with a view to ascertaining the acidity of the gastric contents following gastro-enterostomy and other operative procedures for gastric and duodenal ulcers in a fairly large group of patients. The method of determining the gastric acidity is not new, but has been studied in various series of patients by several authors. In reviewing previous investigations, however, I was unable to find that the post-operative acidity had been estimated in any series at a definite time after operation in all the cases. Gastric acidity estimations were made for patients tested post-operatively at various periods, ranging from one to several months; and the results have been recorded as an average post-operative acidity for various procedures for the relief of gastric and duodenal ulcers. For example, Wilensky and Crohn report a series of thirty-seven cases of gastric and duodenal ulcers in which the pre-operative acidity was determined. The post-operative results are averaged under headings, such as "one to four months after operation," "four to twelve months after operation," and "one to four years after operation." Smithies reports percentages of reduction in acidity for cases in which the determination was made "soon after operation," "one to three years after operation," and "three to five years after operation." Also in the records which I have reviewed there has been no reference to any determination made less than four weeks after operation. The periods range from four weeks to several months or years. In almost all the cases of the series presented herewith the determinations were made on the sixth and eighteenth days after operation.

It is a common observation of physicians accustomed to dealing with large numbers of gastro-enterostomized patients that the patients, as a rule, are enthusiastic over the almost immediate relief following operation. When after five or six days reaction is complete and the patients again receive food into the stomach, they are free from the distress which followed digestion only a few days before. Because of this striking relief it was thought desirable to record the gastric acidity as soon as possible after operation and, if feasible, make the determinations on the same post-operative day. If similar results were found previous work would be verified and definite data would be furnished to associate relief from symptoms with a fall in acidity.

In conjunction with the work in making estimations of acidity six days following operations on patients who were still in the hospital, estimations were made after the patients' discharge from the hospital. The latter range from thirteen to twenty-seven days after operation, but nearly all on or near the eighteenth day. A number were made on patients whose acidities had been determined on the sixth day. In all the cases studied pre-operative estimations of acidity had been made. From facts obtained the following comparisons were made:

1. Pre-operative gastric acidity with that found the sixth day after operation in the same patients (118 patients).
2. Pre-operative acidity with that found the eighteenth day in the same patients (169 patients).
3. Pre-operative acidity with that found the sixth day and the eighteenth day in the same patients (49 patients).

For comparison separate estimations were

*Submitted to the Faculty of the Graduate School of the University of Minnesota in partial fulfillment of the requirements for the Degree of Master of Science in Surgery, May, 1920.

made in eleven duodenal ulcer patients in whom the ulcer was excised and no gastro-enterostomy done.

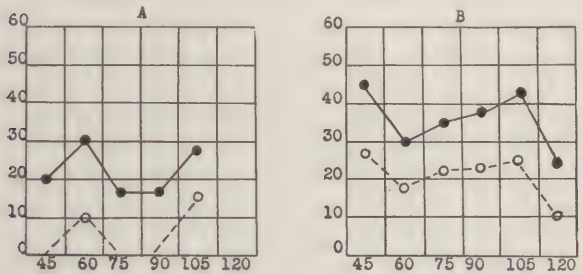
Pre-operative and post-operative estimations of acidity within three weeks of the operation were made in a total of 238 patients. In all but eleven of these a posterior gastro-enterostomy had been done, regardless of the direct treatment of the ulcer itself. In all the gastro-enterostomies the short, or "no-loop," anastomosis with the jejunum was performed, the opening in the jejunum

In the eleven patients with duodenal ulcers in whom gastro-enterostomy was not done, knife or cautery excision of the ulcer was carried out, and the line of incision was in the longitudinal axis of the gut, closure being made transversely after the Heineke-Mikulicz plan except that in most cases the incision probably did not extend through the pylorus. These cases are grouped separately, but the number is too small to permit of conclusions with regard to the effect of such treatment.

In 38 of the 227 cases, 10 of duodenal ulcer and 28 of gastric ulcer, in addition to the gastro-enterostomy, the ulcer was dealt with directly. The Balfour cautery was used in most of the

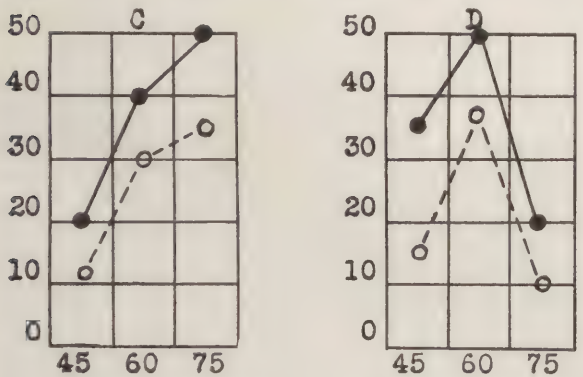
CHART 1

Typical Post-operative Activity Curves*



A.
Case A272297. Eighteen days after operation.

B.
Case A270693. Fifteen days after operation.



C.
Case A276268. Six days after operation.

D.
Case A275718. Six days after operation.

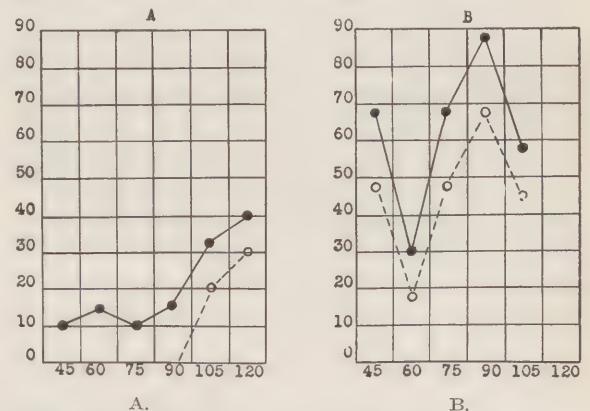
*The solid black represents total acid; the circles represent free acid. The abscissæ represent acidity; and the ordinates represent time in minutes after the test-meal.

being but 10 or 12.5 cm. from the ligament of Treitz, which marks the duodenojejunal junction.

The stomas for the most part were made uniformly about 6.25 cm. in length and were all sutured with absorbable material. A few silk sutures may have been used at the ends of the opening, where the stress comes as the jejunum turns down from the anastomosis, but these were placed only in the serosa. No Murphy buttons were used.

CHART 2

Atypical Post-operative Activity Curves*



A.
Case A265915. Eighteen days after operation. Free acid did not appear for one and three-quarter hours after the test-meal.

B.
Case A185042. Eighteen days after operation. The primary rise is high but the secondary rise exceeds it.

*The solid black represents total acid; the circles represent free acid. The abscissæ represent acidity; and the ordinates represent time in minutes after the test-meal.

cases of gastric ulcers; the others were excised by knife. Knife or cautery excision or ligation of the arteries supplying the ulcer area were the methods of dealing with the duodenal ulcers that were operated on directly.

In the group of 227 cases on which this study is based, a new outlet was made in the stomach. The opening was similarly located on the stomach wall and in the jejunum, and was of nearly uniform size in all the cases. The titrations were made on definite post-operative days, on the sixth or eighteenth days, or on both.

METHODS OF OBTAINING GASTRIC CONTENTS

The specimens obtained on the sixth day were taken while the patients were still in the hospital.

They had had their supper the night before, usually a cooked cereal, fruit, toast, and tea. If desired, milk was given in small quantities during the day and night until midnight. Before the patient had had breakfast, about 5:30 A. M. in these cases, the test-meal, 200 c.c. of beef bouillon prepared by dissolving a bouillon cube in hot water, was given. Only 200 c.c. were given to avoid any risk of gastric distension. Forty-five minutes later the first specimen was taken, followed by two others fifteen minutes apart. This carried the fractional acidity test over a period of one hour and a quarter after taking the meal. The routine test-meal in the gastric laboratory at the Mayo Clinic is 400 c.c. of fluid given with about 38 gm. of arrowroot crackers.

It is a rather delicate procedure to pass a small Rehfu_s tube into the stomach of a patient with a recent abdominal wound. The patient's co-operation is required as the tube must be swallowed; it cannot be forced down the esophagus, as is done when the ordinary rather large and inflexible lavage tube is used. If there is a single act of retching, the abdominal muscles contract forcibly on the wound and cause severe pain, and the investigation often ends right then so far as that patient is concerned. Great care was taken to select patients who had shown little sensitiveness to the pre-operative tubing.

Separation of the wound did not occur in any of the patients, but in one or two of the first patients tested the skin parted for a few centimeters following an act of retching.

As a measure of protection for the wound it was found that, if the superficial stitches, which on our services are removed usually on the sixth day (the seventh post-operative day), are left in for a couple of days longer, the skin does not separate. Another precautionary measure is placing the patient in a completely supine position with the abdominal muscles entirely relaxed. It is no more difficult for the patient in this position to swallow the tube than when sitting upright.

Before trying to pass the tube, the wound was inspected to make certain that it was then intact. If any infected, unhealed, or indurated wounds were found in which healing had been retarded the attempt was not made. In replacing the dressing the adhesive strips were drawn enough tighter than they had been previously to relax the skin around the wound. This sometimes caused a little discomfort to the patient, but the

first shock of retching was taken up in the contraction of the relaxed abdominal muscles and in the tightly drawn adhesive strips. If the patient showed any intolerance to the tube the attempt to pass it was abandoned. No trouble was experienced with wounds after these precautions were observed. After the removal of the tube the wound was again inspected and the adhesive strips placed at their original tension.

Because of the necessity for extreme care in the selection of patients for the test more than eight months were consumed in collecting the 118 sixth-day acidity specimens. The specimens that were obtained on or near the eighteenth day were taken by routine methods at the gastric laboratory after the patient had been discharged from the hospital. Less than half of those from whom the specimens had been obtained at the hospital reported for a subsequent examination at the gastric laboratory. The patients tubed at the gastric laboratory had had their ordinary meal the night before followed by a few raisins; then the test-meal was given without the patient having taken breakfast. The first specimens were aspirated forty-five minutes later. In most cases subsequent aspirations were made at fifteen-minute intervals until four or five specimens had been obtained. This carried the fractional acidity determination over a period of one hour and three quarters. In noting the acidities and taking the averages the highest acidities found during the estimation were used throughout. Only three specimens, carrying the test over a period of one hour and fifteen minutes following the test-meal, were obtained from the sixth-day patients. This was not because of certainty that the highest digestive acidity would appear within this limit, but because of a time limitation in which to do the work each morning, and because of a desire to relieve the patient of the tube as soon as possible. It is believed, however, that in nearly all the cases the highest acidity was obtained, both at the hospital and in the gastric laboratory.

The work of Crohn and Reiss with the fractional method of analysis of stomach contents has shown that in a normal stomach free acid appears very soon after a test-meal, and rises gradually, attaining its maximum at about the end of one hour, falling thereafter to the end of the digestive cycle, about two hours. In making pre-operative tests on patients with ulcer it was found that the rise was more rapid, reaching the maximum somewhat before the end of one hour,

maintaining a high level to near the end of the digestive cycle, which was usually prolonged to two, often to three, hours, a result confirmed by Friedenwald and Leitz. This finding should be kept in mind in a consideration of the corrosive and irritation theory in which it is maintained that acid and pepsin in the gastric juice are active in causing and maintaining the chronicity of duodenal and gastric ulcers.^{1,8,9,10,14,16}

Post-operatively in gastro-enterostomy cases Crohn and Reiss found the curve approximately normal with a rise to a maximum at the end of one hour, followed by a fall, then a rise, and then a fall to the end of the digestive period. These authors attributed the fall to the inflowing of intestinal contents with the alkalization of the gastric contents. If a marked subacid curve were found it was considered due to a large stoma which allowed the continued regurgitation throughout the digestive period, as well as in the fasting state. Acidities for normal stomachs were estimated as ranging from 44 to 32 and from 68 to 52 for total and free acids, respectively.

Wilensky and Crohn worked along the same line and obtained similar results, and later Wilensky obtained practically the same results.

The results in the series in the Mayo Clinic support the evidence obtained elsewhere, that the

highest acid values of the digestive period were obtained in the cases tested on the sixth day, even though the aspirations were carried only to one and one quarter hours following the test meal. (Chart 1 A, B, and D.)

The curves of acidity values in some cases following gastro-enterostomy are very erratic. The total acidity may rise gradually from the beginning to the end of the test, about two hours. Free acid may not appear until the third or fourth aspiration, one and one-half to one and three-quarter hours. (Chart 2 A.) Again, total and free acid may appear and increase rapidly to a maximum by the second aspiration, one hour, fall markedly by the third aspiration, one and one-quarter hours, and sweep to a high level very soon. (Chart 2 B.) In fact all variations of curves are found, but a close comparison shows confirmation of the rule stated by other observers.

RATIONALE OF GASTRO-ENTEROSTOMY

A review of the literature discloses the difficulty with which a definite experimental basis is established for the theories with regard to the cause and cure of chronic gastric and duodenal ulcers. One very definite conclusion may be drawn, however, that is, gastro-enterostomy is a drastic stroke in a vicious cycle. The evidence to support this is somewhat as follows: Something

TABLE 1

AVERAGE PREOPERATIVE ACIDITY AND THE POSTOPERATIVE ACIDITY ON THE SIXTH DAY IN 118 PATIENTS

Patients	Preoperative Acidity		Postoperative Acidity		Acid Reduction		Reduction Percentage	
	Total Acid	Free Acid	Total Acid	Free Acid	Total Acid	Free Acid	Total Acid	Free Acid
118.....	58	42	31	18	27	24	46	57

TABLE 2

AVERAGE PREOPERATIVE ACIDITY AND POSTOPERATIVE ACIDITY ON THE EIGHTEENTH DAY IN 169 PATIENTS

Patients	Preoperative Acidity		Postoperative Acidity		Acid Reduction		Reduction Percentage	
	Total Acid	Free Acid	Total Acid	Free Acid	Total Acid	Free Acid	Total Acid	Free Acid
169.....	59	43	37	23	22	20	37	45

TABLE 3
AVERAGE PREOPERATIVE ACIDITY AND POSTOPERATIVE ACIDITY ON THE SIXTH AND EIGHTEENTH DAYS
IN FORTY-NINE PATIENTS

Patients	Pre-operative Acidity		Post-operative Acidity Sixth Day		Acid Reduction		Reduction Percentage		Postoperative Acidity Eighteenth Day		Acid Reduction		Reduction Percentage	
	Total Acid	Free Acid	Total Acid	Free Acid	Total Acid	Free Acid	Total Acid	Free Acid	Total Acid	Free Acid	Total Acid	Free Acid	Total Acid	Free Acid
49.....	60	45	29	17	31	28	51	62	33	19	27	26	45	57

TABLE 4
AVERAGE PREOPERATIVE ACIDITY AND POSTOPERATIVE ACIDITY
GASTRIC ULCERS

Patients	Pre-operative Acidity		Post-operative Acidity Sixth Day		Acid Reduction		Reduction Percentage		Postoperative Acidity Eighteenth Day		Acid Reduction		Reduction Percentage	
	Total Acid	Free Acid	Total Acid	Free Acid	Total Acid	Free Acid	Total Acid	Free Acid	Total Acid	Free Acid	Total Acid	Free Acid	Total Acid	Free Acid
9.....	39	24	27	13	12	11	30	45	38	13	11	22	22	62
19.....	49	35	19	6	8	16	21	72	19	7	8	15	21	68
5.....	37	22												
DUODENAL ULCERS														
109.....	59	44	33	19	26	25	44	56	38	24	22	21	36	46
150.....	60	45	31	18	31	30	60	62	34	21	28	27	45	56
44.....	62	48												

TABLE 5
AVERAGE PREOPERATIVE AND POSTOPERATIVE RESULTS IN CASES OF DUODENAL ULCER
EXCISED WITHOUT GASTRO-ENTEROSTOMY

Patients	Preoperative Acidity		Postoperative Acidity		Acid Reduction		Reduction Percentage	
	Total Acid	Free Acid	Total Acid	Free Acid	Total Acid	Free Acid	Total Acid	Free Acid
0								
11.....	71	58	63	51	8	7	11	12

causes ulcer. Most recent writers incline toward the infective theory, which postulated selective localization from a chronic focus, as claimed by Rosenow. The ulcer causes hyperirritability and spasm^{6,7}, which produces pain.^{6,7,9} Hypersecretion and hyperacidity follow; associated with these factors are retention, prolongation of the "digestive phase"¹² of the gastric cycle, and the opportunity for long contact of gastric juice high in acid and pepsin with the ulcer area. These ingredients are important in sustaining the low-grade inflammatory condition in the mucous membrane and connective tissue, and they encourage chronicity of the ulcer.^{1,8,16} Sustained chronicity only means repetition of the cycle, each time on a little higher plane of viciousness.

Rehfuß, after years of investigation of gastric problems, states that "rupture" of this vicious cycle is demanded in the treatment of chronic gastric or duodenal ulcers. He proposes to accomplish this by medical measures, that is, starvation, selected diet, sedatives, and lavage.

Operation effected the "rupture" in my series of cases. They show that high acidity does not continue throughout the whole of the digestive period in the post-operative ulcer cases, as it does in the pre-operative cases. Thus the "interdigestive" phase of the gastric cycle is prolonged. (Rehfuß.)

The stomach is normal in size or smaller following operation,^{13,14} showing that the hypersecretion and retention have been eliminated. By removing the retention and hyperacidity the long contact of acid and pepsin with the ulcer area is prevented, and alkali fluids are substituted. This should relieve the irritation to the ulcer and consequent tendency to chronicity.^{1,8,16} When the irritation is markedly lessened spasm and pain are relieved,^{6,7,9} and the patient will declare that he is cured. This sequence of events will account for the striking relief these patients experience so soon following operation. Whether or not the ulcer heals promptly it is quite probable that, instead of the previous vicious cycle with its gradually ascending malevolence, a benign cycle with permanent ameliorating influence is substituted.

Tables 1, 2, 3, and 4 present the results of this investigation. Tables 1, 2, and 3 include both gastric and duodenal ulcer patients, on all of whom gastro-enterostomies were performed. The gastric ulcers are separated from the duodenal for purposes of comparison. (Table 4.) The results in a small group in which duodenal ulcers

were excised and no gastro-enterostomy was performed are shown in Table 5.

DISCUSSION OF TABLES

The reduction of acidity averaged about 50 per cent for all the groups. The eighteenth-day averages are always somewhat less in reduction than the sixth-day specimens. Wilensky contends that, sooner or later, the acidity climbs back to the height it held before operation. Eusterman believes that the post-operative acidity is permanently reduced from 20 to 40 per cent in 80 per cent of patients. If the acidity returns to its original height, the former train of symptoms may return temporarily, to disappear within a year after operation.

The percentages almost universally show more of a reduction of free acid than of the total acidity. This is interesting since the uncombined acid, with pepsin, is believed to be the ingredient that is instrumental in irritating the ulcer area and sustaining its chronicity.

The findings in the gastric and duodenal ulcers are only what would be expected since the gastric ulcers have not the high pre-operative acidities of duodenal ulcers.

The group of duodenal ulcer cases with excision is small; the findings are at least suggestive, however, and indicate desirability of studying a larger group of cases.

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STANDARDIZATION OF WEIGHTS AND MEASURES*

By L. E. AKELEY, A. M., LL. D.

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VERMILION, SOUTH DAKOTA

About twenty years ago, when the United States Government reorganized its standardization of weights and measures and established the present Bureau of Standards, it was a great advance in the organization at Washington in this matter over what it was in the past. About that time, when Dr. Stratton became director of the Bureau, he made every effort to arouse interest in the question of adopting the metric system for general use. I became interested in this matter, and since that time I have been asleep on this question, as perhaps you all have, until Dr. Spafford woke me up a few weeks ago. I have been receiving circulars which have been sent out regarding the adoption of the metric system, but did not take much interest in them until Dr. Spafford awakened me and asked me to furnish a contribution on the subject for this meeting. I have not written a formal paper on the subject, and am simply going to have a heart-to-heart talk with you.

To you men, who have been trained in a scientific way, it is hardly necessary for me to explain the metric system.

Dr. Stratton at the time appeared before a committee of Congress to explain the matter and told of the difficulty he had. After he had elaborately described the whole system, it was clear to him that his listeners did not clearly understand the fundamental proposition. In other words, his class was rather slow in absorbing what he had said. Today I think I have a more intelligent audience than did Dr. Stratton at that time, judging by his reported experience with them.

I am going to assume that, like all scientific men, you are thoroughly acquainted with the metric system. We do not expect this report to be accurate. In fact, most of us have passed the age where we indulge in little refinements;

nevertheless, it is a good thing for us periodically to become acquainted and to resurrect and re-animate our intelligence about this matter because one of these days the change will be made.

Of course, the war emphasized the importance of the metric system. Let me give you an instance in this connection. The Baldwin Locomotive Works built engines for France all through the war, and all its measurements were made in the metric system. All the munitions, everything we built in this country for carrying on the work, had to be measured in terms of the metric system. There was no other way of dealing with our Allies. The English-speaking peoples are the only peoples that use an antiquated and unscientific system of weights and measures. We are the only ones. France, Italy, Spain, Eastern Europe, South America,—all use the metric system, and it is impossible for us to do business with those people satisfactorily without using the metric system ourselves. If we are going to capture and hold South American trade, our colleagues must take precisely the things in terms of meters, grams, and liters. There is no other way of appealing to these people. That compels us to use double systems. All scientific people are constantly using a double system. I teach my classes the metric system, and there is constantly the problem of appealing to them in terms of the common system.

The metric system is simply one world-wide uniform method of expressing weights and measures in units, decimally divided. It is like the United States American monetary system; whereas in American money the dollar is the unit, in the metric system there are three other principal units,—*meter* for length, *liter* for capacity, *gram* for mass. These terms are standard all over the world. Each of these units, like the dollar, is multiplied and divided decimally.

Dollar, meter, liter, gram are simply names to indicate whether the computation refers to

*Presented at the thirty-eighth annual meeting of the South Dakota State Medical Association, at Watertown, May 21 and 22, 1920.

money, length, mass, or weight. We may use the same terms to express meters, liters, and grams as we do to express dollars.

In order to give a definite idea of the value of each of the metric units, the meter is 10 per cent greater than the yard; 500 grams is 10 per cent greater than the pound avoirdupois; the liter is 5 per cent more than the United States liquid quart, and 13 per cent less than the British liquid quart. Of course, there are objections raised against the adoption of the metric system, but most of these objections fall to the ground. It is said that the manufacturer cannot readily adapt himself to the metric system. The fact that the Baldwin Locomotive Works used the metric system in their dealings with foreign countries is proof positive that manufacturers can adapt themselves to the metric system. I know of no serious difficulty which would interfere with the adoption of the metric system except the general inconvenience that men would feel in changing to the system of units. There would be a certain inconvenience in that regard.

It has been said that the average child of ten who knows the metric decimal dollar and its subdivisions, can learn in ten minutes as much of the metric system as 90 per cent of all the people ever have occasion to use.

Dr. Stratton shows that most of the great advances in the way of scientific invention are set forth in newspapers and technical literature in terms of the metric system; and, in order to take full advantage of these ideas, it is necessary for our manufacturers and inventors to utilize and be familiar with the metric system. It seems to me there should be no hesitancy in scrapping obsolete, antiquated processes which hinder advancement and efficiency. Dr. Stratton further points out that the whole process of making electric lamps has been changed three times in a gen-

eration; that one great railroad has been rebuilt in the lifetime of men now living; and that the business of generating and distributing electricity is changing so rapidly that it is difficult to keep pace with it. How much simpler would be the progress to *meter, liter, gram* in weights and measures! Instead of confusion, adoption of a world system of measures will bring a spirit of enterprise and mark a new era of inventing, manufacturing, and merchandising.

William G. McAdoo, former Secretary of the Treasury and Director of Railroads, has said that a very great stimulus indeed would be effected by our accepting the metric standards in industry, education, and science in use throughout the world, whose prosperity and efficient service to so great an extent now squarely depend upon our producers.

I have a lot of faith in human nature when human nature is in extremis. We did a lot of fine things during the war. The war is over and we are trying to relapse back into the ordinary gait, and reforms do not come very fast. If we get into *extremes* again, I feel confident the metric system will go through. When the opportunity comes for us to take a hand in this thing, let us avail ourselves of it and put the metric system through. (Applause.)

DISCUSSION

DR. B. T. GREEN (Brookings): I have been receiving this literature for perhaps ten or twelve months and have been regularly throwing it in the waste-basket, not because I was not interested, but because I thought any attention I might give it would amount to nothing. However, I have been thoroughly convinced many times that Dean Akeley's stand for the adoption of the metric system is well taken, and that with this system we should have all the advantages that have been discussed by him this morning. I have to admit that I still stand by the old method of writing prescriptions, except once in a while I practice a little bit of the metric system.

LETHARGIC ENCEPHALITIS*

BY FRED B. CLARKE, M. D.

BILLINGS, MONTANA

Following shortly after the epidemic of influenza, in the winter of 1916-17, von Economo, of Vienna, described a series of cases presenting an unusual symptom complex, of which cranial nerve involvement and lethargy were the predominating features. Because of the pronounced

lethargy he designated this unusual complex, *lethargic encephalitis*.

In February of the same year numerous cases were reported from France, and shortly afterwards the disorder was recognized in England and in the United States.

Bassoe¹, early in March, 1919, described a syndrome consisting of somnolence, stupor, ocular

*Presented at the annual meeting of the Montana State Medical Association at Helena, Montana, July 14 and 15, 1920.

and other cranial nerve involvement with or without temperature; and Pothier² described in similar grouping of symptoms occurring among the soldiers at Camp Lee, Va. The clinical observations and pathological findings from cases occurring over such a wide distribution show the disease to be the same, and has established "lethargic encephalitis" as a definite disease, the symptoms of which are referable chiefly to disturbances of function of the nervous system. This disturbance may be either loss of, increase of, or perversion of function, easily accounted for by the wide distribution of involvement of both the central nervous system and its covering, although in rather a disseminated way.

The neighborhood of the aqueduct of Sylvius and the fourth ventricle, basal ganglia, pons, and medulla are the regions in which the most pathology is to be found. Necessarily, such a wide patchy distribution of pathology gives rise to clinical phenomena, showing a wide range of symptoms.

McNally³ has described six distinct clinical groups, which are as follows:

1. Cases with general symptoms and without localizing signs.
2. Cases with third nerve paralysis and general disturbance in the function of the central nervous system.
3. Cases with facial paralysis and general disturbances in the function of the central nervous system.
4. Cases with spinal manifestations and general disturbances in the function of the central nervous system.
5. Cases with polyneuritic manifestations and general disturbance in the function of the central nervous system. And
6. Cases with mild or transient manifestations (so-called "abortive" cases.)

It is easily seen that errors of diagnosis must necessarily be great until such time as the disease becomes better understood and the recognition, especially of the broader line cases, be made early. The onset is ordinarily gradual, consisting of such prodromal symptoms as headache, irritability, and general muscular weakness, persisting from a few days to a couple of weeks, ordinarily followed by cranial nerve paralysis or weakness, asthenia, lethargy, excessive sweating, choreiform jerks, retention of urine, and increase of temperature, which rarely exceeded 102°.

Some of the patients give the history of having influenza a few days or weeks before; still others have no knowledge of having had influenza. The

general cephalic symptoms in some cases may be marked early; in others, evidence of focal irritation, or loss of function referable to the brain or cord, may be the first symptoms to call attention to the disorder.

The most striking general symptom present in the majority of instances is a disturbance of consciousness manifesting itself in various degrees, from slight drowsiness to profound coma; but there are cases in which this is not a conspicuous feature, such as Case 3, which I have selected to bring out the unusual meningo-radicular type of the disease described by Reilly⁴ and later by Bassoe⁵.

Focal symptoms are in the majority of instances motor rather than sensory, although sensory disturbances as mono- or hemi-anesthesia have been described as well as paresthesia and hyperesthesia.

Nerve-root pains are occasionally observed, Barker, Cross, and Irwin⁶ mention such a case, and Bassoe describes their occurrence.

Of the motor nerves the most frequent involvement is of the third, fourth, and sixth, innervating the eye muscles; and diplopia is the symptom complained of by more than 60 per cent of the patients. Involvement of the seventh nerve is the next most frequent. In a few instances dysphagia and dysarthria develop. In the elective distribution of motor cranial nerve involvement, lethargic encephalitis shows a very close analogy to the cranial nerve lesions of poliomyelitis. Many cases show lesion of the extrapyramidal motor system, evidenced by Parkinsonian mask. This feature has been distinct in my cases.

The duration is seldom shorter than two weeks, and in many instances has persisted for from four to six weeks, while the mortality rate is ordinarily found to be about 30 per cent. The leucocyte count is usually from 7,000 to 12,000 per cmm. Spinal fluid ordinarily shows globulin weakly positive with a normal Fehling reduction; and the cell count rarely over 100 per cmm., the cells being of the mononuclear type, with negative Wassermann and negative as to smear, culture, and inoculation.

When this disease occurred in England the Local Government Board instituted a thorough investigation through the Medical Research Committee⁷, and the relationship of this symptom complex to botulism and poliomyelitis was thoroughly studied. Their investigations have shown that it does not have any relation to food poisoning, which was first considered as likely, occur-

ring as it did, when the war-time food situation was far from satisfactory. They have also been able to show, although the clinical manifestations, especially cranial nerve involvement, were somewhat similar to those occasionally seen in poliomyelitis, that the disease differed from the epidemic clinical and pathologic features common to that disease.

It is of prime importance to determine the exact etiology of a disease which is, without doubt, an infection. An immense amount of experimental work has been done which has been unproductive up until the last few months. McIntosh⁸ has apparently been successful in inoculating monkeys by using material from the central nervous system of fatal cases.

Loewe, Hirschfeld, and Strauss⁹ using filtered extract from the nasopharynx of cases of encephalitis, have induced meningo-encephalitis in monkeys and rabbits. They also have succeeded in inoculating a monkey by using affected nerve tissue, following the method ordinarily successful in the transmission of poliomyelitis to monkeys. A minute filterable organism resembling the globoid bodies of poliomyelitis, has been cultivated by them.

Loewe and Strauss¹⁰ report that they have been able to secure positive cultures from the cerebrospinal fluid, and that they have been able successfully to inoculate rabbits, using the spinal fluid, by the intracranial method.

In general, it may be said that our present knowledge of the causal agent is, indeed, meager, and a great deal of experimental data must be collected before a definite conclusion as to the etiology can be reached.

It should be borne in mind in handling suspected cases of this disease that the nasopharyngeal secretions might well be considered as a possible source of contagion, and the proper measures taken. It is also equally true that patients should be isolated; in brief, a case should be considered as having a communicable disease and all necessary precautions taken.

That there is a relationship existing between influenza and lethargic encephalitis, has not been proven, although some observers report a high percentage of their patients as having had influenza immediately prior to the development of encephalitis; others can find no such relationship, although, considering the wide distribution, abortive types, etc., of influenza, one would hardly say that a patient had not had influenza.

Following the panepidemic of influenza in 1890 a rather unusual malady called "nona" made

its appearance, and there are many physicians now living who consider the present "nona" and epidemic encephalitis one and the same disorder.

Medical history also shows that in 1712 there occurred in Tübingen, Germany, somnambulant states following influenza, outstanding clinical features of which, lethargy and stupor, prompted the name "sleeping sickness."

There are many other descriptions in medical history of similar conditions following influenza, so that one must consider that there is a possible relationship, the exact nature of which is unknown.

From the pathological point of view, the disease is an infection showing a predilection for the basal ganglia, the region of the fourth ventricle, and the aqueduct of Sylvius, mid-brain, and bulb, although the entire central nervous system is involved to a variable extent. Pathologists are generally agreed that the lesions are interstitial and parenchymatous infiltration with round cells, infiltration of vessel walls with cells of mononuclear type, small punctate hemorrhages and lesions of the nerve cells, whether in the presence or absence of inflammatory processes around the cell.

Bassoe and Hassin¹¹ in a description of the histopathology, concluded that the findings in this disease do not differ materially from those found in the African sleeping sickness, due to trypanosoma infection, which because of the clinical and pathological data on hand, suggested a close relationship of their etiologic factors,—that is, the epidemic encephalitis may be caused by a parasite akin to the trypanosoma.

Neil¹², from abundant pathological material, concludes: 1st, that the histopathology is somewhat similar to that of poliomyelitis, but without such extensive infiltration of the meninges and larger vessel walls, and 2d, that the picture is also very much like syphilis. In syphilis, however, the infiltrations are confined to the vessels, producing endarteritis and, occasionally, gummata in the vessel walls.

CASE REPORTS

CASE 1.—J. L., aged 19, a printer, consulted me first Dec. 14, 1919, complaining of double vision, which was first noticed the day before. It was impossible to determine which muscle presented such decided weakness that diplopia occurred, but there was a moderate degree of double ptosis and it is fair to assume that third nerve involvement produced the diplopia although it was not present when he would fix his eye upon an object. The seventh nerve on the right side showed decided weakness. There were no other neurological symptoms. Vision in right eye was 8/10; and in the left eye, 20/20. He was a little restless and seemed somewhat excited.

The Wassermann was negative; urine, negative; heart and lungs, negative; no evidence of lead poisoning. He was to return the next day, but did not; however, he reported on the 17th (three days later). At this time, his temperature 102°. He complained of feeling drowsy with slight headache and irregular inco-ordinated muscular jerkings all over the body. While the lethargy was decided, when he was aroused he would answer questions in a rather clear manner, then would relax into the lethargic state; occasionally, he would talk rather foolishly. The spinal fluid was negative, but with increased tension. Within a few days he became quite lethargic and hard to arouse. At one time it was impossible to arouse him, and this period lasted for ten or twelve hours. There was some generalized sweating. The temperature curve rather high, ranging from 102° to 104°. At one time at the onset of the disease he complained of a severe pain in the right wrist; no pathological reflexes. It was necessary to catheterize him for a time. He was confined to bed for two weeks. Convalescence was rather short, and he went to work about four weeks from the onset of his trouble.

He still has partial paralysis of the 7th right nerve; otherwise his condition is normal. On the 11th of January his vision was 20/20 in both eyes, and he apparently is able to do his work.

CASE 2.—J. F., aged 29, an aviator, first consulted Dr. Weedman, of Joliet, on November 5, complaining of blurring of vision and ringing in his ears. He was restless and somewhat excited. At this time he complained that his bowels had not been moving freely for several days. His temperature was normal. He was ordered to bed by his physician but continued at his work and refused to take care of himself. His physician thought from his symptoms that he had a mild attack of influenza. He was again examined by his physician on November 11. At this time he complained of tenderness of the muscles of the neck and blurring of vision, and had a temperature of 102°. On the 15th he became drowsy and almost comatose. Pupils were equal, but very sluggish. Reflexes were hyperactive. Forty-five c. c. spinal fluid under pressure were removed, after which the reflexes became much decreased and the lethargy not so pronounced. It was necessary to arouse him for nourishment, but he would answer questions in a fairly clear manner.

On November 20 he came to Billings, and was seen by Dr. Walters, who made the following notes:

"Occipital tenderness and decrease of visual acuity; a coarse tremor of hands; exaggerated knee reflexes; decided nystagmus of the left pupil, sluggish to light and accommodation and the same condition was true of the right pupil; nystagmus in right eye more marked than in left; right pupil larger than left one; fundi, normal; throat, negative; ears, normal. It was difficult for him to fix his attention upon the examination, and he was decidedly restless; there was marked left facial paralysis."

Because of the preceding symptoms and the ones which he presented at the time, the diagnosis of lethargic encephalitis was made.

He was sent to the hospital, and during his stay there the lethargy was pronounced. There was a slight afternoon temperature, although not exceeding 100.5°. At times he was restless and very noisy; picking at the bed-clothes, but was, as a rule, mentally slow. On the 22d of November, he slept but one hour during the night

and complained of headache, and there was generalized twitching of the muscles. It became necessary to catheterize him. Spinal puncture showed fluid under increased tension, which, aside from a slight increase in cells mononuclear in type, was negative.

On December 4 his temperature was normal. He made a slow but uninterrupted recovery, but still complains of difficulty in reading and some roaring in his ears. He was seen again by me on the 15th of January. At this time the vision was normal; there was slight paresis of the left facial nerve, and he complained at times of the same buzzing in his ears, which was present at the onset of the attack February 2, 1920.

He is not as yet able to resume his work and becomes weak upon exertion although seven weeks have elapsed since the onset of his trouble.

CASE 3.—W. K., aged 37, a bookkeeper, first consulted me on December 11, 1919. His chief complaint was pain in his arms and jerkings of the muscles, which he could not control. These pains were sharp and stabbing and did not correspond in distribution to any of the nerve trunks and were typical root pains. He stated that his trouble began three weeks before, with pain in the back of his neck and shoulders, which was soon followed by extremely severe pain radiating down the forearms. There were no other pains.

Neurological findings: teeth, many filled canals, and numerous crowns; gums, unhealthy, suggesting infection. Lungs, heart, and abdomen, negative. Hemoglobin, 80; red-blood count, 4,200,000; white-blood count, 7,200; temperature, normal; blood Wassermann, negative; urine, negative; lumbar puncture advised and refused; x-ray of teeth suggested and also refused. The patient was given fifteen one-half grains of codein for relief of pain. Contrary to instructions he took the entire amount of codein within twelve hours, but with no relief from pain. In addition to this one-fourth grain morphine sulphate was given with relief for two hours. The pains in the arms increased, and within a couple of days he developed marked jerkings of the muscles of the abdomen and legs.

December 22, 1919: Marked myoclonic jerkings of the muscles of the abdomen and legs, even while asleep; developed irregular temperature, ordinarily not above 100°; rather rapid pulse. Began sweating profusely; became extremely weak; moved to the hospital on the 24th.

Lumbar puncture showed fluid decidedly bloody, with marked increase in pressure; 30 c. c. were removed; there was in this amount 8 c. c. of red-blood cells; spinal fluid was centrifuged. The globin was positive; allowing for the red-blood cells, there was a count of 34 cells per c.mm. They were mononuclear in type. The blood in the fluid did not suggest that the blood was due to accidental injury of a vessel, but gave the impression that the fluid was bloody before puncture. No bacteria seen. His symptoms became more marked and retention of urine occurred. He soon became delirious, developing hallucinations of sight and hearing of a fanciful nature. It was impossible to give him a sedative which would make him sleep. At this time mechanical restraint was necessary. He became more restless after using morphine, codein, hyoscin hydrobromide, paraldehyde, etc. During this time he complained of extreme and severe pains in his arms, abdomen, and legs. After ten days of delirium he became clear mentally, but completely exhausted. Sweating was

profuse and neurological findings other than those mentioned were negative during entire illness.

January 10, 1920: Still continues to have irregular choreiform jerkings of the lower extremities; able to sit up part of the day; and is on the road to recovery.

February 10, 1920: A month later; he is still extremely weak and unable to leave the hospital.

May 12, 1920: Appearance much better; asthenia still marked; unable to do a full day's work; says that he does not seem to get enough sleep; can sleep all night and take long naps, both in the morning and the afternoon.

We must not expect to find the mental hebitude and lethargy described as the one most characteristic finding constant in all cases, for it is not. Case 2 was restless, excitable, and delirious for a week before sleepiness occurred. Case 3 was exceedingly restless and irritable for a number of days, culminating in delirium, which persisted for ten days, necessitating careful watchfulness, as well as mechanical restraint. During this period marked hallucinations of sight and hearing were present, and there were delusions of transient nature based upon his hallucinating disturbances. He frequently mentioned being subject to *x-ray* examinations through the wall and thought that the pains in his legs and back were due to the fact that we were slicing him with a "dried-beef cutter." In spite of such active hallucinating experiences he remained for the most part quiet in bed, face expressionless, eyes closed; but, in spite of his entire preoccupation he could be aroused, and would answer questions in a much more logical way than one would expect.

Following his mental restlessness he became calm, and slept a great deal, but not more than one would expect in a patient who had had practically no rest for a week, although several weeks after recovering sufficiently to be discharged from the hospital, he complained of not being able to secure enough sleep, although sleeping sixteen hours a day.

It is of interest to note that various hypnotics and sedatives, such as morphine, codeine, chloral hydrate, hyoscin hydrobromide and paraldehyde were used in the case, but they served only to increase the mental restlessness.

A symptom of great interest to me in all of these cases was the muscular jerkings, which were decided and in Case 3, were intense, beginning in the arm and in four or five days including the muscles of the abdomen and legs. These movements were quick muscular jerkings sufficient to move the limb. They were irregular as to time and degree of muscular contraction, and would occur while he was asleep. At the first

observation one would get the impression that the patient was assisting in them, but no one, by effort of will could continuously keep them up; in fact, in Case 3 they occurred constantly and were rarely absent. After leaving the hospital they were still occasionally noted while he was asleep, although during waking hours they were not present.

When I first saw Case 3 in my office, he complained of shooting pains in his forearms, which he could not locate, and he could not keep them from jerking. Such a symptom suggested irritation of the nerve roots, and because of the bilateral distribution my first thought was an inflammatory lesion of the cervical nerve roots.

The meningoradicular type is extremely uncommon. An exhaustive search of literature has revealed but few cases.

DIFFERENTIATING DIAGNOSIS

This disease clinically has many points of similarity to meningitis and poliomyelitis. On the other hand there are many outstanding features which aid in differentiation.

The onset is distinctly different from either, since it is very less stormy and it is not unusual to find that your patient has been ill for a number of days before seeking medical advice. This feature is well illustrated in Cases 1, 2 and 3, none of whom sought early advice and one delayed as long as two weeks.

The headaches are not of the intense incapacitating type common to meningitis; and, while they occurred in all the cases herein recorded, they were not severe, neither does the temperature present such a high general level nor is the pulse as rapid. While the lethargy is marked, after the fully developed condition obtains, yet the patient can and will answer questions in a rational way, although there may be slowness of cerebration and mild disorientation for time and place. Frequently the lethargy is so marked that a state of coma exists, and in one of our patients (Case 1) it was impossible to arouse him for a period of twelve hours. The spasticities and increased reflexes are not as well marked as in meningitis, and, although spasticities have been reported in a few instances, yet there is, as a rule, a decrease in muscle tonus.

One characteristic feature of all the cases was the marked muscular jerkings, which would serve to differentiate them from meningitis. The leucocyte count rarely exceeds 12,000, which has decided differentiating value, and a study of the spinal fluid will assist in excluding meningeal

irritation due to pyogenic infection, since the cell count is relatively lower and the cells are mononuclear in type. Pathogenic organisms are not found, and the absence of a positive Wassermann reaction would exclude meningeal irritation due to syphilis.

One naturally would consider, in a case with decided cranial nerve involvement, poliomyelomyelitis, but in this disease the onset of the paralysis is sudden, and the maximum nerve-cell destruction with loss of function occurs within a few hours. Again, the lethargy is not pronounced; pupillary reaction is ordinarily not disturbed, nor is there to be seen the inco-ordinated jerkings of the muscles; and the fact that encephalitis is more often a disease of adults, would be of value in differentiating them.

An interesting query arises: Why should this disease present a clinical picture so varied? The only possible explanation is found in the elective distribution of the pathology and the clinical findings which indicate that either the cerebrum, basil ganglia, mid-brain, or bulb might be the seat of the greatest irritation, and in this respect it presents an analogy to the varied pathology of poliomyelomyelitis.

In some cases blurring of vision may be an early and important sign as it was in case 1, in which case ptosis of the eye-lids and diplopia suggest early involvement of the third nerve, which were the symptoms for which the patient sought relief. It is entirely within reason to feel that there are many borderline cases not presenting the typical or severe symptoms which might easily be overlooked, as they frequently are in poliomyelitis.

Profuse and persistent sweating which is not amenable to treatment, may be marked, and in Case 3 his gown and bed linen were changed from eight to ten times a day, and drugs were of no value for relief.

Aside from the involvement of the oculomotor nerves, the next most frequent involvement is of the 7th nerve. It was present in Cases 1 and 2, and had not entirely cleared up in either case

three months later. When the infective process attacks the bulb, difficulty of swallowing may be present.

Retention of urine is very frequent, and the catheter must be employed. This feature of the disease certainly suggests decided weakness of neuromuscular control.

Convalescence is slow, and muscular weakness more marked than in individuals who have survived an attack of influenza pneumonia. Disturbance of vision many times persists (as it has in two of my cases), and if one may judge from case-reports the ability of the individual to resume his place in society is decidedly impaired.

Treatment so far has been symptomatic, but a lumbar puncture seems to be of great value in relieving symptoms. The administration of hexamethylenamin has been considered of value, and it has been given intravenously with reported good results. Intravenous injections of blood sera of convalescents has been suggested as of possible value, but it has not as yet been proven. Netter¹³ has reported a reduced mortality rate by means of fixation abscess induced by injections of 1 c.c. of turpentine.

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SURGERY OF SPINAL CORD TUMORS*

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Sir Victor Horsley, in 1887, was the first successfully to remove a spinal cord tumor,—a fibromyxoma. Since then our information concerning such tumors and allied lesions has increased materially, but it is evident that numerous tumors have been, and still remain, undiagnosed. Schloessinger states that in a series of 35,000 necropsies he found one-sixth as many cord tumors as brain tumors.

In reviewing a group of 330 surgical cases of spinal cord tumor, Frazier reports 134 situated in the thoracic region, 73 in the cervical, and 67 in the lumbosacral; 6 were not classified. Eighteen per cent of the patients were cured completely, and nineteen per cent were improved.

Sargent reports a series of 27 cases. In 15 the tumor was extramedullary and was situated intrathecally; 14 proved to be benign; 1 was a fibrosarcoma. Eleven of the 15 patients obtained satisfactory results from operation, 6 having resumed their regular duties. One remained unimproved, and 3 died. The remaining 12 cases were classified as malignant, with unsatisfactory operative results.

Elsberg, in a personal series of 105 laminectomies, reports 67 cord tumors; all the patients presented either direct or suggestive symptoms of a spinal cord lesion. Forty-nine (75 per cent) of the tumors were extramedullary, and 18 (25 per cent) were intramedullary. Seven of the 49 were situated extradurally, and 42 intradurally. In 48 cases the tumor was correctly localized, in 16 the level signs were too low, and in 3 they were too high; however, Elsberg reports a mortality of only 6 per cent in a series of 200 laminectomies for cord tumor, trauma, et cetera.

PATHOLOGY

Spinal-cord tumors may occur at any level, but are very prone to occur most in the thoracic region. Seventy-five per cent are situated extramedullary and are removable; the results depend directly upon the duration of symptoms. If the growth is diagnosed early, its location serves as an important indicative factor of the surgical possibilities and of the prognosis. As a rule, extramedullary tumors are of endothelial origin, being endotheliomas, psammomas, or fibromas; sometimes they are myxomas, lipomas, chondro-

mas, osteomas, gliomas, and sarcomas. Intramedullary tumors are usually of glial origin; they infiltrate the cord, and do not lend themselves to surgery so readily as the extramedullary type. Occasionally the cord can be incised longitudinally, and a partial removal made. In a few instances marked palliative relief has been afforded.

SYMPTOMATOLOGY

Soft, slow-growing tumors produce very few symptoms at the onset and are difficult to diagnose; while hard, encapsulated lesions, such as psammomas, cause pronounced symptoms, usually of the Brown-Sequard syndrome. Sooner or later there is complete loss of pain, tactile, and temperature sensibilities, of motor power, and of reflexes in the segments at the tumor level, together with defense and increased reflexes below the segments involved. Fusiform tumors do not present the pronounced level that rounded tumors present; and an impairment of sensory changes over several segments usually occurs before a complete loss is observed. The outstanding feature in the diagnosis of spinal cord tumors is the slowly progressive loss of motor power in conjunction with the loss of pain, tactile, and temperature sensibilities, and exaggerated reflexes below the tumor level, different from those in myelitis, which is associated with a rather rapid development of motor and sensory loss. There is, however, the exception of chronic myelitis, in which the trouble develops similarly to that of cord tumor and produces motor and sensory changes. Horsley and Elsberg have referred to this condition as meningomyelitis. In some cases surgical treatment appears to be beneficial, but there is a question in my mind whether much actual improvement is ever obtained. Unfortunately, it is impossible definitely to differentiate these conditions in advance of exploration, and, if only patients presenting all of the symptoms of spinal-cord tumor were accepted for operation, a certain group of tumors simulating chronic meningomyelitis would necessarily be barred.

REVIEW OF CASES

In reviewing the results in the Mayo Clinic from the surgical treatment of spinal-cord tumors, it was found that 62 patients have been

*Presented at the thirty-eighth annual meeting of the South Dakota State Medical Association, at Watertown, May 21 and 22, 1920.

operated on,—23 up to 1916, and 39 during the past three and one-half years.

In the group of 23 patients complete removal of the tumor was effected in 5, partial removal in 4, and in 9 a tumor was not found.

In the group of 39 patients complete removal was effected in 20, partial removal in 8; the tumor was not removable in 6, and in 5 a tumor was not found. The condition in these 5 was a marked meningomyelitis with thickened meninges and gray plaques over the arachnoid, showing upon microscopic examination fatty degeneration with fibrous change. The post-operative course of this group of 39 patients has been investigated carefully. Eleven are completely cured and are able to carry on their regular work; 11 are improved; 9 are unimproved; 4 have been operated on too recently to give data of value; and 4 have died.

The mortality in the group of 23 patients is rather high, but it must be remembered that the operations were performed before the development of present-day technic.

RÉSUMÉ

Spinal-cord tumors occur more frequently than is suspected.

About from 50 per cent to 60 per cent can be removed completely.

Results depend directly on the duration of symptoms; if a tumor is completely removed within six months after the manifestations of symptoms, complete recovery may be expected.

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FRACTURE SPRAINS*

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A fracture sprain is an injury of a joint, the result of trauma, which involves the breaking of a small fragment of bone, and is associated with a stretching or tearing of the ligaments of the joint, or the forcible avulsion of a tendon from its bony attachment.

It may be the only injury present, or may be part of a more gross or extensive lesion. It includes a fracture and a sprain, the former lesion being overshadowed by the signs and symptoms of the latter.

It is distinct from a common sprain, in which only the ligamentous structures are partially ruptured; it may be associated with a dislocation.

It is important to recognize a fracture sprain, because of prognosis, as well as treatment, which are decidedly different in common sprain. Correct appreciation of its presence will indicate a definite line of treatment and assure a good prognosis; if unrecognized, the subsequent disability and discomfort are decidedly greater. In common sprain rest for a short time with early massage and mobilization are indicated. In fracture sprain, however, the formation of excess callus with consequent deformity and disability must be avoided, requiring rest for a longer period and more careful passive and active motion.

The diagnosis of fracture sprain depends on a true appreciation of the mechanical factor which caused the injury, the presence of tender localized areas, occasional detection of crepitus, and the röntgenogram. While all the usual signs of fracture should be looked for, the röntgenogram will be the final arbiter in diagnosis.

To get accurate x-ray findings and true interpretation, one should always make exposures in two planes and often by stereo-röntgenogram for best results. Do not mistake an unossified epiphysis in the young for a fracture.

The prognosis is good if diagnosis is correct. Proper treatment can come only from correct diagnosis, and prognosis depends mainly on this factor. Length of disability is usually longer in sprain associated with local fracture than in simple sprain; final results are usually perfect, with proper treatment. Joint tuberculosis is liable to develop after this type of injury in susceptible patients.

Treatment consists in adjusting and immobilizing the joint for a sufficient time, varying from four to eight weeks, depending on location and parts involved. Massage and passive and active motion should be instituted later than in ordinary sprain, because the small size of bone fragment

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and the powerful leverage or traction of attached tendon and ligaments tend to displacement.

Position of the adjacent limbs to relax muscles which exert unfavorable traction is very important, and is necessary to perfect final results.

A true conception of the extent and location of the fracture and the inflammatory reaction, with recognition of the exact anatomical and functional factors involved, will give the right index to procedure and management.

Frequent locations of fracture sprain are the joints of the phalanges of hand and foot, the styloid process of ulna, the lower end of the radius, the head and neck of radius, the tuberosities of humerus, the trochanters of the femur, the tibial cartilages of the knee, the tips of malleoli, and the os calcis. More unusual are the tearing away of deltoid or quadriceps attachments of the humerus and the tibia, respectively, condyles of the humerus, the olecranon, the acetabulum of the ilium, the lower end of the tibia, and the astragalus.

In every apparent sprain look for associated fracture, and treat it as such unless its presence can be eliminated by definite radiograms.

DISCUSSION

DR. EMIL S. GEIST (Minneapolis): Dr. Sohmer has ably presented a series of illustrations of a condition which is really very common. In fact, it is so common that it has only become apparent since the liberal use of the *x*-ray has been practiced in medicine, and we find that a great many injuries about joints which we formerly thought were sprains, pure and simple, are of this type of fracture sprain, or sprain fracture, to change it about. I have always felt that nature has been kind to the patients who have this type of fracture sprain. When we think of the ligaments and what they have to do, and, if we remember that they have been placed about joints to guard against overmotion in a certain direction, we find that motion in a great many joints is limited by the ligaments, and the normal range of motion is limited by the ligaments, these being strong enough to guard the joint against undue motion in any particular direction and to act as a protection to the joint. When an excessive amount of force has been put upon a ligament so as to tear it, or in the direction of the pull, one of three things happens: either the ligament will tear, or it is going to stretch, or to pull out its insertion, which must happen when an excessive amount of force is used.

Fortunately, a large number of these cases are of fracture sprain. The ligament is an avascular structure of slow healing qualities. Very frequently the bony insertion tears, which is very vascular. In one case healing will be slow; in a fracture case the type of healing will be rapid because the circulation about the end of the bone is good. We have to deal with the question of quick and rapid healing, and that is one of nature's ways of preventing a more serious injury. A real sprain or a real tear of the ligament is an extremely

serious injury to a joint because of the poor healing qualities of ligaments as such.

The essayist showed us one picture of an ankle-fracture sprain about the foot. With the posterior portion of the os calcis it is often difficult to decide whether we are dealing here with a fracture sprain or with an abnormal bone, which occurs in a certain percentage of cases because of the os trigonum. We find that on the back end of the astragalus there are indifferent types of process, extending backward, attached firmly to the astragalus sometimes, almost pediculated, and sometimes even separated; and, when it is separated, we call that accessory bone the os trigonum, and it is difficult to say whether we are dealing with the os trigonum or a sprain in this region. Such a case may take on a medicolegal aspect. When a man has a weakened ankle, and we find such a tear present, we do not know whether we are dealing with the os trigonum or with a fracture sprain. In a sprain fracture we have irregular contour, the jagged outline of the shadow showing a condition of this fracture, whereas the os trigonum is nicely circumscribed.

DR. M. S. HENDERSON (Rochester): Dr. Sohmer's paper is very important. It emphasizes the fact that we must take *x*-ray pictures of the injuries of the extremities, otherwise we may not be able to tell whether we have a fracture or not. Clinically, the mere absence of crepitus is by no means a criterion as to whether or not a fracture is present.

In addition to what Dr. Geist said, there are two points I might add: When a patient comes to us and we find a fracture sprain, what are we going to tell as to the length of the disability? A good deal depends upon the age of the patient. If the patient is over forty years of age the convalescence will be quite prolonged. There may be a good deal of swelling, and edema may come on and persist, for months sometimes, particularly where that patient is below par.

Dr. Sohmer made the statement that tuberculosis might develop following a fracture sprain. That statement brings up the point that tuberculosis develops after what we call a slight trauma. Where there has been extensive trauma inflicted and possibly a comminuted fracture caused, tuberculosis is seldom seen. It is in the apparently mild traumas we find tuberculosis developing afterward. In children this can be explained by the fact that probably a little hemorrhage takes place between the epiphysis and the shaft of the bone, which makes a suitable focus for tubercle bacilli to develop.

Dr. Sohmer did not have time to say anything about the treatment of these cases, and it would be interesting if he would say something upon this point in his closing remarks.

DR. J. W. ANDREWS (Mankato): I have been interested in the paper of Dr. Sohmer because of the mistakes I have made in my former practice. As Dr. Geist has said, we have not known much about these fracture sprains until the *x*-ray came into use; and in my former practice I am sure I have had cases of fracture that I diagnosed as sprain, and I know that since the use of the *x*-ray I have had some and found to my mortification afterwards when an *x*-ray was taken that I had to deal with a fracture.

I believe that this is a very important subject to the general practitioner and to the surgeon, and we all have to do more or less with liability work and railroad

work, and these are the cases in which we find fractures or injuries of this kind.

I wondered why Dr. Sohmer called all of his cases fracture sprains. For example, where a stone falls on the foot of a man and fractures one of the metacarpal bones, I do not see why that is a fracture sprain. It is a fracture that would not be recognized without the use of the *x*-ray. We used to give chloroform or other anesthetics to determine the existence of a fracture. Take a fracture of this kind in the foot: it is difficult under anesthesia to determine the presence of a fracture, but the *x*-ray would show it very readily.

DR. SOHMER (closing): I might say that "fracture sprain" is a sort of compromise term. It is really a fracture. These injuries are all fractures, but we call them fracture sprains because of their clinical manifestations. They may be mistaken for sprains in an injury to a joint, whether due to trauma or to avulsion of a ligament pulling a piece of bone away. That is why any fractures near joints are of interest in discussing fracture sprains.

In a general paper of this kind I could not go into details as to the treatment, and could mention only the general principles. If you get a fracture and want to reduce it, the position of the limb plays an important part. For instance, in a fracture sprain where a portion of trochanter is torn away, you would naturally place the limb in such a way that the trochanter is not pulled away from its normal site. When the styloid process of the ulna is torn away, you put the hand in such a position as will bring the bones together. The treatment consists in reducing the fracture, getting proper adaptation of the broken ends, and putting it up in a plaster cast or splint, as seems best. A properly applied cast is best, remembering that mobilization and massage at the proper time are very important.

"A TELEPHONE STORY" AND WHAT AN EDITOR WOULD HAVE SAID

BY A MINNEAPOLIS PASTOR

The Twin City telephone service has become so bad, as has the service in other parts of the country, that we are glad to find a *patient* man—one of the gospel—who can speak of it with proper restraint.

As he asks "What would you have done?" the query demands an answer from every virile citizen. We answer it, and pass it along for you to answer. The story appears in a Minneapolis church organ called the "Grace Messenger," and is too good to be confined to, and enjoyed only by, a single pastor's flock.

Here is the story, and our answer follows:

A TELEPHONE STORY

If the following narrative were a private affair it would have no place here. But it is not private; it is public. It concerns the community, and particularly the members of my church, and they have a right to know the facts herein related.

When the combine (or divorce, or whatever you may choose to call it) of the two telephone companies had

been accomplished my name and number were quietly slipped over into the St. Paul section of the directory.

When I discovered the fact I went to St. Paul and said that since I live in Minneapolis of course I must have my name in that section of the directory. They replied that since I lived in Minneapolis I would have to go to the Minneapolis office about that.

I did so, but there they told me that since I was a St. Paul subscriber they could do nothing until the St. Paul office began negotiations. I secured a written statement to that effect and returned to St. Paul. But St. Paul looked with scorn upon the literary efforts of Minneapolis and firmly refused to move a muscle.

What could I do? To return to the Minneapolis office seemed foolish, yet there was nothing else to do, and do it I did. Upon my arrival there I asked for the general manager. He came, gave me audience, listened to my story, and promised to have the matter attended to if I would pay him \$6.50 in advance. I did and went home rejoicing. A few days later two men came to the house and put the telephone on the Minneapolis wire, and all was well.

Some time after that, however, I met a man who thought it passing strange that I should fall so far back toward heathendom as to have my telephone taken out. I assured him that I had done nothing of the kind and proceeded to explain the mystery. "But," he replied, "the information operator says that you have."

When I got home that day I sat down and called up the information department. "Wendell's number, please," I said, "he lives at 52 Seymour." "He has no telephone any more," came the reply. "Are you sure about that?" "Just a moment, please . . . Yes, his telephone has been disconnected." "But," I protested, "I am the man, and I am using my own telephone. My number is 41,221. My name has been taken out of the directory, and people have no way of finding my number except through your department. Please note the number and give it when people inquire."

Be it far from me to fix the blame. I do not know where it belongs. But people continued to complain that Information insisted that I have no phone. Presently a letter came from Dr. O. J. Johnson, of St. Peter, telling me that he had tried to reach me by the long distance, but had been told that my telephone has been disconnected. Being anxious to reach me at once, it must have been rather annoying to him to have to resort to letter writing. I called him up from my end of the line, then I sat down and wrote the telephone company, stating my story and requesting, in behalf of the public, that the records in the information department be corrected. The company wrote me in reply that the matter would be attended to, but trouble continued.

When nothing else availed I went in person to the office and called once more for the general manager. He looked amazed, as before, and assured me that there would be no further trouble. He himself called for my number, then and there, and got it. He invited me to try, and I got it. Evidently the thing was in working order at last.

Was it? Several times since then people have called me up, all out of patience with the trouble they have in getting me, and scolded me roundly for not informing the information operator of my new number! What would you have said in reply?

We would have said "Go to —."

THE JOURNAL-LANCET

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THE CONVALESCENT POLITICAL PARTY

In the days following November second of this year it seemed apparent to everyone that there was a partial return to a national sanity, that the troubles which had occupied the attention of the world and had almost crazed a section of it, were lifted from the shoulders of the American people—perhaps shifted would have been a better word to use, for the troubles, trials, and responsibilities are here just the same, but they are transferred to another party for the working out of a complete recovery. It is a good index, however, to feel that when a critical situation is put before the American people they pull themselves together, adjust their mental faculties, and think and vote right.

There seems to be very little depression among the Democrats over the fact that the Republicans are again in power, for the Democrats have felt that things were going badly, and they welcomed the transfer of the care of the political invalid to another political doctor. There seems to be a new opinion forming as to the necessity of putting new and untried schemes, theories, and impressions into power, and the sect in this country who have been quoting Russia as an example to follow must feel that, after the few years that have elapsed since the Czar's death, and the Soviet reign, perhaps they were not altogether just in their opinions of the American ideal. H. G. Wells, the celebrated English writer, who visited Russia in 1914 and again in

September, 1920, says that Russia is suffering from a vast, irreparable breakdown, yet in spite of that Minnesota struggled with its conscience and with its destinies when it elected a Republican governor and other Republican officials.

Judging from the large majorities attained by the Republican party in Minnesota, which so far over-reached the expectation of the so-called Independent party, which really means the Non-Partisan, Minnesota seems to be an unfertile ground for theorists. It brought out the fact, however, that there are a great many voters who are Socialistic. How far their socialism extends no one knows,—neither do they know, themselves. They are simply flitting from theory to theory, never alighting upon a safe branch of the political tree. Dr. Shipstead, the Non-Partisan candidate, is evidently an alumnus of the University of Minnesota, for it is rumored that most of the University people voted for Shipstead; and it is strongly hinted that the University is almost entirely controlled by the Socialistic contingent. However, the treatment they received at the last political clinic was very thorough, and doubtless it will do many of them good.

SAFEGUARDING DRUG SALES

A recent calamity in Minneapolis, in which a prominent man received a large dose of a poisonous drug and lost his life, has awakened a dormant cautiousness which needs to be fully and completely aroused. In the first place, the telephone is too convenient a vehicle for giving medical advice. It is all right, perhaps, for making appointments; but to tell a man over the telephone to go to a drug-store and buy a drug that he has perhaps never heard of before, and the name of which he, in turn, may misspell when writing it on a slip of paper, or the name of which may have been misunderstood by him in taking it over the telephone, is a hazardous matter. Then, too, the confidence the recipient has in taking almost anything that is handed to him in an indiscriminate dose is to be frowned upon.

The careless handling of drugs is one of the things that most doctors and druggists will have to be more careful about. Every physician should refuse to prescribe a drug over a telephone if it is in any way harmful; and no druggist should dispense drugs except upon a prescription written and signed by a physician, at the same time knowing that the drug is rightly prescribed and is not dangerous. The difference in the terminology of the chemical compositions is

something that appalls a good many physicians because they become rather reckless and indifferent about what they order. When one orders an *iodide* one does not mean an *iodine*.

Then prescribing and dispensing of drugs is a matter in which two people must co-operate properly. Unfortunately, the prescribing of drugs in combination is not well instilled into the mind of the physician, and there are undoubtedly numbers of medical men who mean right, but who do not know how to combine drugs so that they will be chemically proper or so that they will be presentable and will not make false and unpleasant compounds. For instance, sometimes physicians order a gum which has been dissolved in alcohol and attempt to prescribe it mixed with water. The result, of course, is a milky, muddy precipitant compound, and a druggist who puts up a prescription of that kind, which is chemically bad and ethically unsafe, should call the doctor upon the telephone and ask his advice.

Then, too, in the matter of dosage there is a conflict between doctors and druggists. The doctor sometimes unwittingly orders a large dose of certain drugs with which he feels perfectly familiar. To the druggist it seems a poisonous dose, and he naturally calls up the doctor and asks if the prescription is correct. If the doctor replies that it is, the fault lies with the doctor, not with the druggist.

The doctor, too, is commonly a poor penman, and his writing is almost illegible. He writes the first letter of a word so that it can be deciphered and the rest is simply a running stream of strokes. How can anyone, even a good druggist who can decipher a poorly written prescription, be blamed if a mistake occurs? It must be admitted that the druggists are often careless, and they put in things that are not called for. This is due to the fact, sometimes, that some friendly patron is talking to the pharmacist while he is compounding a prescription. It is like talking to the driver of an automobile on a mountainside or near a precipice. If he gets interested in something outside of the business at hand he is likely to throw the car over the precipice.

Every drug which is poisonous should be so labeled, and, if so labeled, the frequent taking of bichloride of mercury tablets would not be so common, although some people take them deliberately for suicidal purposes.

A good druggist keeps a good grade of drugs. He keeps his stores renewed, and, therefore, has fresh products, for he knows that many drugs deteriorate when kept any length of time. And

if he is a good, live man and attends strictly to his business, you can depend upon him as you depend upon your best friend. The doctor should be equally alive to his responsibilities, and should know what he is giving and what he is giving it for. He would be much safer if he ordered an innocuous preparation than if he attempted to combine drugs of whose properties he knew nothing.

THE CASUAL DUMPING OF PATIENTS

It is very easy, sometimes, for the doctor to dismiss a patient by simply telling him to go West for his health. This, unfortunately, is the advice that is commonly or frequently given to the tuberculous patient. The result is, that many of the Western states have become the dumping-ground of the Eastern man, and among the states which have suffered from this indiscriminate and careless advice is Colorado. Denver, its capital, is surrounded more or less by mountain peaks and groups; and on account of its foothills and its glorious air, with an altitude of 5,100 feet, it is an ideal place for the tuberculous patient. Denver has, too, within its boundaries several wonderfully constructed and large sanitariums for the care of these patients. It has in various of its mountain resorts other institutions and tent colonies caring for thousands of victims.

The city of Denver has been very generous for many years in caring for these unfortunates who come within its precincts, but there has arisen lately a feeling that too many tuberculous patients have been sent to Denver without the benefit of a careful examination and looking into the civic, social, and financial conditions of the patient. The result is, that every day patients suffering from tuberculosis who are sent in or who drift in from Eastern states are on their "last legs," both physically and financially, and the city of Denver has been obliged to care for them in some way. But the inrush has become so great that they have made it a rule to investigate the case thoroughly, and to inquire particularly after the relatives who may be financially responsible. Thus they are able to send these patients to a sanitarium where they pay a moderate fee and are benefited, or at least cared for until death relieves them of the responsibility.

One cannot emphasize too strongly this condition, which prevails in Denver, and it is suggested that, before a patient is advised to go West for his tuberculosis, the doctor survey his case with greater care and that he take into consideration the ability of the man to pay for his own

and his family's upkeep while he is seeking to restore his health. Otherwise, the climate of his own state, wherever it may be, furnishes a resort where his tuberculosis can be cared for just as well as in Colorado or in any other Western state. Look, for instance, at the remarkable care which people receive at Saranac Lake, N. Y., in the Adirondack mountains, where it is as cold and snowy as in Colorado. These people get as well in Saranac as they do in Denver because they are cared for under a system which has been carefully worked out and has proven beneficial to the patients. Remember that Western cities, as well as Eastern cities, are carrying enormous financial burdens for improvements, upkeep, and government, and to add to their burdens is sometimes taking an unfair advantage.

MISCELLANY

THE EFFECTS OF RAREFIED AIR

Dr. Spafford kindly permits us to publish a letter received by him from a well-known South Dakota man, which will have interest, we are sure, to all of our readers, because of its medical and personal aspects. It is as follows:

Cerro de Pasco, Peru,
Hospital Americano,
August 13, 1920.

Dr. F. A. Spafford,
Flandreau, S. Dak.,
Los Estados Unidos.

Dear Doctor:

I promised you last May I would write you a letter about this country, its people, and my work after I got down here and all squared around.

I am located in one of the oldest cities on the continent in the Andes 14,225 feet above the sea on the edge of a plateau known down here as the "Junin Pampa." There are snow-clad mountains all about us of magnificent grandeur. We are away above all vegetation aside from a short grass and moss upon which the llamas and donkeys manage to eke out a miserable existence. This I judge from the fact they all look very thin and overworked. This pampa is from 12,000 to 16,000 feet above sea level. The southern end of it is the home of vast herds of sheep. These haciendas are of great size, and often several kinds of livestock are raised on the luxurious grasses that abound on this great upland. There are no other industries here in the mountains aside from the mining.

Copper, silver, and vanadium are the chief metals mined in this immediate locality. On this pampa is a lake covering one hundred and twenty-five square miles that abounds with all kinds of wild water fowl. There is also all kinds of wild game in the foothills to the north and east. I say foothills when really I should say at the base of the mountains. We have had several messes of partridges lately, and they tasted as fine as any wild bird I have ever eaten. There are

numerous species of deer in the lower hills and valleys. Like everything else down here, even the frogs reach an enormous size. The hunting is great, but there is no fishing, the reason for which I do not know, as there are as fine mountain streams down here as anywhere on earth. We are only three hours' ride from the tropics to the east of us. I have not as yet taken any trips to the interior, but expect to do so some day soon.

The inhabitants are made up of two kinds, the real Peruvian or native Indian, and the mixed Spanish and Indian, or what is known as the Peruvian. As in the States, the real Peruvian is a descendant from some European country, chiefly Spain. She is the mother country to all these countries on the West coast of South America. The real Peruvian speaks the very best Spanish.

The Indians live in stone and adobe houses, with no windows or chimneys. A small hole near the ground in one side of the house serves as the door and window. It is so low one has to stoop to get inside at all. The bare ground serves as the floor. It gets very cold at night, and for warmth all the domestic animals, dogs, pigs, and sheep, sleep in these hovels on the floor with the natives. That is why the door is placed so low without a threshold.

As the day advances it warms up, and by noon it is quite warm and bright at this season, which is the dry season, or winter. Occasionally it will frost at night, and a very thin coat of ice will form on the water courses, which is all gone by nine in the morning.

The natives burn peat for fuel. It makes only a smouldering fire and so effectually blackens the walls of the houses that when a curtain is hung over the doorway the place is as dark as any photographer's dark-room you ever saw.

The tribe of Indians located in this vicinity is the Cholo. He is a very improvident and care-free fellow. "Manana" (tomorrow) is the great rule by which the social and industrial progress of this land and these people has been developed. These Indians furnish the labor with which the mines are worked. The more intelligent make very good workmen.

The city of Cerro de Pasco is one of the oldest on the continent. It is constructed on the same plans as all the cities of the Spanish-speaking peoples, no regard being paid as to sanitation or beauty. This, with the added personal liberties of these people, which is freely permitted, in the way of vice, has added no charm that might be present otherwise, for vice of all kinds flourishes with a vengeance.

The effect of the altitude on the average new arrival and foreigner will no doubt be interesting to you. I shall tell you a few characteristic changes in our everyday existence that are caused by the rarefied air at this height. The air pressure is eight and a half pounds to the square inch considered volumetrically. We are one-half way through the earth's atmosphere. The locomotives up here have no ash pans on them, live coals, cinders, and clinkers are dumped or allowed to fall on the cross-ties with impunity. They do not burn the ties, for there is so little oxygen up here combustion will not take place without a good draught.

I make it a practice to boil surgical instruments for at least forty-five minutes to be certain of any sterilization whatever. All foods that need to be boiled re-

quire twice as long thoroughly to cook them as at sea level. Thermos bottles corked up and started up the hill blow their corks long before reaching the high point.

The difference in the density of the air is very readily illustrated if you do any x-ray work. A ten-inch spark-gap here is equivalent to a six-inch spark-gap at sea level. The air being so much different it breaks down much more readily and also has less conductive power for radiating heat. It is necessary to renew electric light globes very frequently, for the heat they make is not conducted away fast enough by the air, and they burn out in a much shorter time than at sea level.

All respiratory and cardiac disorders are very much more serious up here than at sea level.

I have seen several pneumonias, and unless these patients are sent down the hill at once my experience has been a death rate of 75 per cent. It is interesting to note also that a pneumonia patient does not last up here until he gets a complete consolidation. He gets blue and has the most extreme air-hunger at once, while, as I have observed, he is still in the early stage of the disease, the respiratory rate being all out of proportion to the temperature and the pulse rate. Three days is the maximum time these patients have lasted in the hospital. If the condition is recognized early and if the patient is sent down the hill, his condition is often completely reversed long before he gets to sea level. He wants to get up and be about. We keep a plentiful supply of oxygen always ready in each camp and do not hesitate to run a special train down the hill on short notice for these cases.

The blood-pressure up here is considerably lower than at sea level. I have observed it on myself and several other individuals who have just come up the hill. The greatest difference I have noticed so far is in the diastolic pressure. I have not observed enough cases as yet to set down any exact figure as an average for the change that takes place in either systolic or diastolic pressure.

I noticed when I came up that at eleven thousand feet my head ached, at fifteen thousand feet it ached very badly, and I was unable to walk about and was nauseated. It was hard for me to get my breath, and I felt very uneasy over the precordium.

The headache, distress over the precordium, shortness of breath, and heaviness of the limbs with inability to move seem to be the predominating and important symptoms. I have seen no one that has had the nose-bleed, and the nausea affects only a few. This mountain sickness is called "serochee" up here by the natives. It is a good word, for I never had such a sick, miserable feeling in my life before, and having had no past experience with which to compare it, you readily accept a new word that is as disagreeable sounding as that word to express it all in one breath.

The trip up the hill is a marvelous feat of railroad engineering. Every foot of the way is filled with scenery of an ever-changing wonderful nature. Something if once experienced is never to be forgotten.

There is very much more I could tell you about myself and my new position, which is of course very interesting and is at present absorbing most of my study and all my time. I am very busy looking after the work and trying to get organized, and also planning my future in the new hospital into which I hope

to move by the first of January at La Oroya. My address will still remain Cerro de Pasco.

I often think about you and wish that I had an opportunity to show you some of my cases, as well as to consult you about the many new executive questions I am facing every day. My present hospital has thirty beds and they are full most of the time. I have now four fractured femurs, six fractures of leg below knee and several contusions and lacerations in the house. I have the medical work of five camps to look after. I have an emergency hospital and a doctor in each camp, and shall have an assistant here in the general hospital when I get a full crew. * * *

Yours truly,

(Signed) HAROLD L. CRANE,

Chief Surgeon, Cerro de Pasco Copper Corporation.

AN AMERICAN COUNTRY PHYSICIAN IN THE KING'S DOMAIN AND UNDER ENGLISH PROFESSIONAL ETHICS

The Princeton (Minn.) *Union* tells the following story about the experience of Dr. T. L. Armitage of that city when recently in Canada. Dr. Armitage wrote the *facts* from Vancouver, but they cannot be put in quotation marks for they cannot be distinguished by us from the *Union's* fiction:

Dr. and Mrs. Armitage arrived in Winnipeg on August 6, and registered at the Fort Gary Hotel, which is a very imposing edifice of fourteen stories and has a beautiful marble front for which the guests, of course, pay. The rooms are small, poorly decorated and the guests are extremely lucky if they can get one with a bath. Dr. and Mrs. Armitage were on the second floor of the building and had to pay \$7 a day for a room with bath, whereas, the doctor says, better accommodations and service could be obtained in Minneapolis for \$4 a day. The town itself is beautifully laid out with very wide, clean asphalt streets. There are also beautiful parks and gardens. The best cuts of meat sell in Winnipeg for 23 cents per pound and the remainder is scaled down in proportion.

When he and Mrs. Armitage returned to the hotel from an automobile sightseeing tour he says he was suddenly taken sick and the clerk, a very fine English fellow, summoned the house physician. (Up in that domain of King George, it is well to state, a physician from the United States is not permitted to write a prescription even for himself.) Upon presenting his card and being asked by a very dignified but sociable practitioner of His Majesty's realm from what dire disease he was suffering, Dr. Armitage replied: "From every d—d ailment in the British nomenclature of diseases." Adjusting his monocle, the gentlemanly physician asked: "Would you not like to dictate the component parts of your favorite prescription to me, Brother?" To which, of course, Dr. Armitage replied in the affirmative, proceeded to a drug store, had the prescription compounded, and in fifteen minutes after taking the first dose the patient was himself again. At the drug store Dr. Armitage ascertained that the king of England uses virtually the same prescription when suffering from a multiplicity of ailments.

Dr. and Mrs. Armitage intended stopping at Calgary, but in consequence of the fearful heat (117 in the shade) continued on their trip.

BOOK NOTICES

A TEXT-BOOK OF PHYSIOLOGY, for Students and Practitioners of Medicine, by Russell Burton Opitz, M. D., Ph. D., Associate Professor of Physiology, Columbia University, New York City. Octavo volume of 1185 pages with 538 illustrations. Philadelphia and London: W. B. Saunders Company, 1920. Cloth, \$7.50 net.

This book is not markedly different from other standard texts on the same subject. It contains some material absent from other texts of the same size, and therefore is a valuable addition to a library. It contains a slightly greater number of references to literature than Howell's Physiology, but not nearly so many as Stewart's Physiology.

The compilation of this book represents an enormous amount of work, but it could be greatly improved by more work of an editorial nature.

—J. F. McCLENDON, M. D.

BACTERIOLOGY IN ABSTRACT By Dr. A. B. Wallgren, Assistant Professor of Biology at the University of Pittsburgh. 340 pages. Medical Abstract Publishing Co., N. D. Ed. 2. Cloth, net \$1.25.

This volume, as the name suggests, is a brief abstract. It treats only of the fundamental element of bacteriology. The work is not comprehensive enough for students of medicine, but it might serve as a useful guide for a hasty review of the entire subject of bacteriology. It should be very useful for nurses' training schools and public schools in outlining courses in bacteriology.

—IGNATIUS J. MURPHY, M. D.

THE DISEASES OF INFANTS AND CHILDREN. By J. P. Crozer Griffith, M. D., Ph. D., Professor of Pediatrics in the University of Pennsylvania. Two octavo volumes totaling 1,542 pages with 436 illustrations, including 20 plates in colors. Philadelphia and London: W. B. Saunders Company, 1919. Cloth, \$16.00 net.

The work is in two well-bound volumes, each being fully indexed. Though not a pretentious system it is very complete. The author, an able clinician, draws from his long experience, but also quotes freely from the literature giving an impartial discussion. For instance, though a believer in the percentage method of feeding, he gives a fair discussion of Finkelstein's classification and methods. The subject matter is well classified and arranged. Of tremendous value are the references from the English, French and German literature. This is of inestimable value if one wants to read widely on a subject. We have no other comparable publication on Pediatrics in the English language. The work should be popular with physicians and students and exceedingly valuable for reference work.

—F. C. RODDA, M. D.

ARTERIOSCLEROSIS AND HYPERTENSION, with Chapters on Blood Pressure, by Louis M. Warfield, A. B., M. D. (Johns Hopkins), F. A. C. P. Third Edition. Price \$4.00. St. Louis: C. V. Mosby Company, 1920.

This is a compact, readable work of 260 pages. It is well written, and is a valuable work. It is an improvement on the earlier editions.

Chapter I gives an excellent review of the anatomy of the arteries, veins, and capillaries.

Chapter II deals with the physiology of the circulation. Here we get descriptions of blood-pressure instruments and blood-pressure taking. This chapter is well worth serious study.

In taking the diastolic pressure, if all would read it at the end of the third phase as Warfield advocates, there would be more uniformity in clinical reports.

Chapter IV speaks of important cardiac irregularities associated with arteriosclerosis and is a concise review on these conditions.

Chapter V is on blood-pressure in its clinical applications.

Chapter VI deals with the etiology of arteriosclerosis, and covers the subject well.

Chapter VII deals with the physical examination of the heart and arteries.

Chapter VIII gives the symptoms and physical signs in general, and is a good introduction to Chapter IX, which is on special symptoms and physical signs. These two chapters are very full, and contain very valuable matter.

Chapter X is on diagnosis. Rightly, the author urges early diagnosis in this disease; and the timely suggestion is made by him, as well as by others, that the profession teach their patients to report for a thorough physical examination twice a year.

Chapters XI and XII deal with prognosis and prophylaxis. The chapter on treatment is practical and complete. While I agree with his advocacy of the proper use of morphine in these cases, I feel considerable care and judgment should be given in its use, as I have seen its use produce weakened wills, disordered stomachs, coated tongues, and lessened exertions; however, as he says, it is invaluable in its proper place.

The last chapter, on "Practical Suggestions," is full of condensed wisdom.

J. F. AVERY, M. D., F. A. C. P.

CARE AND FEEDING OF INFANTS AND CHILDREN. A Text-book for Trained Nurses. By Walter Reeve Ramsey, M. D. Second Edition Revised. Philadelphia and London: J. B. Lippincott Company.

In his introduction to the second edition of this excellent text-book the author says: "It was a great satisfaction to observe that the majority of American and British nurses doing child-welfare work in France and Belgium during the war were equipped with this book." This observation indicates the high position which the book holds among English-speaking nurses. No doubt many general practitioners have also discovered its value as a ready-reference hand-book. The chapters on growth and development, containing a weight-chart and tables, and those on feeding are especially helpful.

The first chapter has been largely rewritten and contains an exposition of the duties of the public-health nurse in the several phases of child-welfare work. Minor changes and corrections have been made throughout the book, and the chapter on "Breast Feeding" contains valuable new material.

M. B. M.

SURGICAL CLINICS OF CHICAGO. Volume IV, No. 3, June, 1920. Philadelphia and London: W. B. Saunders Company, 1920. Published bi-monthly. Price per year: Paper, \$10; cloth, \$14.

1. Report of two cases of empyema with a descrip-

tion of the operative technic and an illustration of a simple method for securing air-tight closure around the drainage-tube.

2. Report of a case of a stone of unusual shape in the intravesical part of the ureter causing a cystic dilatation and simulating a stone in the bladder. Removed through suprapubic cystotomy.

3. A case of prostatic abscess following infectious osteomyelitis of the index-finger. Streptococci found in culture from the finger and streptococci, staphylococci, diplococci, and diplobacillus in the culture from the prostate.

4. Dr. D. C. Strauss presents two cases of perforated gastric ulcer with a clear detail of the diagnostic points and operative technic with special reference to the cauterization excision.

5. Dr. Bevan gives a warning of the great danger of injuring the common duct in cholecystectomy with resulting scar and stricture, which prevents the bile from passing into the intestine, and also points in the technic of the operation.

6. A rare case of paraffinoma. Paraffinoma is a tumor-like lesion developing about some paraffin injected under the skin. Complete excision is the only successful treatment.

7. A clear article with several diagrams dealing with etiology, pathology, diagnosis, and treatment of intussusception. The technic of operative procedure is given.

8. Two articles by Dr. Cornell, of Chicago, on the occipitoposterior position with a description of the mechanism of labor and a diagnosis of this condition. A report of a successful occipitoposterior case complicated with labor pneumonia and fractured rib.

9. A general consideration of tuberculosis of the liver and spleen, alimentary tract, mesenteric lymph-nodes, tubes, and peritoneum is given by Dr. Eisendrath, together with the presentation of a case of tuberculosis of a hernial sac. This diagnosis was not made before operation, but upon opening the hernial sac the interior was found to be studded with white millet-seed nodules, as well as the serous covering of the ileum and the entire peritoneum. The operation was the same as in a non-tuberculous case.

10. Dr. Shambaugh reports a case of malignant tumor of the upper end of the esophagus, causing difficulty in swallowing, to correct which complaint a tonsillectomy had been performed. The doctor decries the prevalent tendency to blame all sorts of conditions on the tonsils and to remove them indiscriminately.

Also a case of encephalitis with paralysis of the soft palate and esophagus, which had been diagnosed post-pharyngeal abscess on account of the difficulty in swallowing and the accumulation of mucus in the pharynx.

Still in another case adenoidectomy and tonsillectomy had been done to relieve symptoms of nasal obstruction caused by wedging tightly of the middle turbinate between the septum and the outer wall of the nose.

A case of asthma cured by exenteration of the ethmoid.

A case of persistent fistula following mastoid extirpation, caused by too persistent packing of the mastoid opening.

11. In an article on tuberculous glands of the neck,

Dr. Gatewood gives the following therapeutic measures in their relative value:

General hygiene.

Pure milk.

Removal of all possible sources of infection.

Operative removal.

X-ray.

Tuberculin.

12. The antiquity of Pott's disease is indicated in a skeleton dating back to 5,000 B. C. from Heidelberg. Other suggestive spinal lesions have been found in Egyptian mummies and skeletons of North American Indians. Bark corsets attest to the fact of some orthopedic treatment.

13. Dr. McWhorter presents a case of chondroma of the thumb following an injury. The entire thumb was amputated.

14. Dr. Moorhead, in an article on appendicitis, emphasizes the value of the high rectus incision because it gives opportunity to meet any conditions that may be found in abdomen.

PAUL W. GIESSLER, M. D.

NEWS ITEMS

Dr. C. S. Neumann has resumed practice at Princeton.

Dr. H. E. Cary has moved from Minneapolis to Jenkins.

Dr. E. R. Fouts has moved from Fort Benton, Mont., to Sand Coulee, Mont.

Dr. A. N. Collins, of Duluth, has been elected president of the Associated Charities of that city.

Dr. R. J. Hodapp, of Madelia, was married last month to Miss Blanche Vinton, of Owatonna.

Dr. C. W. Paulson, of Hartland, has purchased the practice of Dr. A. C. Lindberg, of North Branch.

Dr. O. G. Frink, of South Shore, S. D., was married last month to Miss Hansine K. Nelson, of the same place.

Dr. Herman J. Halvorson, who formerly practiced in Willmar and in Minneapolis, died last month in Chicago.

Dr. F. A. Engstrom, of Wanamingo, has joined the Clinic of Drs. Cremer, Claydon, McGuigan & Co., at Red Wing.

Dr. M. C. Bergheim, a 1919 graduate of the Medical Department of the University of Minnesota, has located at Raymond.

Dr. G. H. Burfiend, after practicing many years at Afton, has moved to St. Paul, and is located at 1049 Hastings Avenue.

Dr. J. W. Campbell, of Fargo, N. D., has

decided to locate in Grafton, N. D., and do eye, ear, nose, and throat work exclusively.

The visiting nurses of Minneapolis have divided the city into four districts with sub-stations in order to make their work more effective.

Dr. Robert C. Farrish, of Sherburn, was married last month. Dr. Farrish graduated from the University of Minnesota with the class of 1901.

Dr. and Mrs. W. A. Allen, of Rochester, celebrated their sixty-fifth wedding anniversary last month. Dr. Allen is still in active practice in Rochester.

Dr. John C. Hvoslef, of Lanesboro, died last month at the age of 81. He was a graduate of Rush, class of '76, and had practiced nearly forty years in Minnesota.

Dr. A. J. Herbolsheimer has become associated with Dr. J. J. McKinnon at Wadena, and will have charge of Dr. McKinnon's practice during his absence from Wadena.

Dr. Nils Tronnes, of Fargo, N. D., has returned from a trip to Norway and Denmark. During his absence he visited the clinics of the leading cities of the two countries.

Dr. T. H. Shastid, who formerly practiced in Superior, Wis., has become associated with Drs. Boyer, Braden, Collins, and Smith, of Duluth. He will do the eye work of the firm.

The dismissal of Dr. William Hotchkiss from the superintendency of the South Dakota State Hospital at Jamestown, S. D., is now said to be the work of the Nonpartisan League of that state.

The medical men of Eveleth, Virginia, Gilbert and other Range cities have combined to erect a large central hospital for the Range. The City of Gilbert has offered a fine site for the building.

Butte, Mont., will hold a health week, December 5th to 11th, when efforts will be made to arouse public interest in better health work. An intensive educational program for the week has been adopted.

Dr. A. Gregory, of Macon, Ga., has become the pathologist of the Sioux Falls (S. D.) Clinic. Dr. Gregory is a graduate of the Vanderbilt University, and was connected with its pathological department.

Dr. J. H. P. Gauss, of Rochester, was married to Mrs. Jessie Beckman, of the same city, last month. After January 1st, Dr. Gauss will be associated with Drs. Shepherd and Dahleen, of San Jose, Calif.

Our associate editor, Dr. F. A. Spafford, of Flandreau, S. D., passed through THE JOURNAL-LANCET office last month on his way to the meeting of the American College of Surgeons at Montreal with Dr. G. C. Cottam, of Sioux Falls.

Dr. Kenneth Taylor, of St. Paul, has become associated with Dr. Joseph A. Blake, the noted surgeon of New York City. Dr. Taylor graduated from the Medical School of the University of Minnesota in 1914, and went at once to France, where he worked with Dr. Blake.

"Dr." John Till, the "plaster doctor" of Wisconsin, was recently sentenced to six months in jail for practicing medicine without a license, and the supreme court of Wisconsin has upheld the verdict. He may go to jail, when the people (some of them all the time) will cry "persecution."

The physicians and dentists of Minneapolis are dreaming of a million dollar building for their exclusive use, and at a recent meeting a temporary organization was effected for the preliminary work. One of the finest buildings of its kind in the country will be planned and built if the movement succeeds.

The following St. Paul physicians have moved into the handsome new Hamm building on St. Peter street, extending from Sixth to Seventh street: Dr. Harry Cannon, Dr. J. O. Cavanaugh, Dr. Thos. J. Gratzek, Dr. J. V. Kelly, Dr. Paul H. Kelly, Dr. W. B. Lande, and Drs. O'Brien, Teisburg & Williamson.

The Hennepin Commonwealth is the name of a breezy weekly health journal which began publication last month in the interests of the health work in the rural districts of Hennepin County. Four nurses are now working in this field, and they have the hearty co-operation of a number of Minneapolis health workers. *The Commonwealth* doubtless will be made an interesting weekly, and will be helpful in a good work.

The American Journal of Obstetrics and Gynecology is the name of a handsomely printed and ably edited new journal from the press of the C. V. Mosby Company, of St. Louis. It succeeds the *American Journal of Obstetrics and Diseases of Children*, which suspended publication in February. Dr. J. C. Litzenberg, of Minneapolis, is a member of the editorial board, composed of over thirty leading specialists of the country.

The Ramsey County Medical Society announces a St. Paul "Clinic Week" for January 10 to 15, 1921. Noted men from the East will take part in the meetings, and two evenings will

be given to entertainments. The executive committee is composed of the following St. Paul physicians: Drs. F. J. Plondke (Chairman), E. M. Hammes (Secretary), A. E. Comstock, C. L. Larsen, C. N. McCloud, E. T. F. Richards, and F. C. Schuldt.

The Mankato and the Holbrook-Sohmer Clinics of Mankato have been consolidated, giving the new Mankato Clinic a group of high-grade men. The following physicians compose the new group: Dr. J. W. Andrews, Dr. Roy N. Andrews, Dr. E. W. Benham, Dr. William Black, Dr. G. A. Dahl, Dr. J. S. Holbrook, Dr. C. J. Holman, Dr. V. I. Miller, Dr. Hiram J. Lloyd, Dr. C. C. Pratt, Dr. A. E. Sohmer, Dr. A. F. Schmitt, Dr. J. T. Schlesselman, Dr. A. J. Wentworth, and Dr. A. M. Snell.

HOSPITAL FURNITURE FOR SALE

Kny Schoerr operating-table No. 3; National Sterilizer, hospital size; Wheel stretcher; Heidbrink Gas Apparatus, three large tanks and cart; Complete laundry equipment; All Equipments for a 40-bed hospital. All of above are in excellent condition. For sale at a bargain, if taken at once. Address 415, care of this office.

OFFICE AND HOSPITAL SUPPLIES FOR SALE

A 10-K.W. Snook X-Ray Transformer with table and dark-room outfit; 3 McDonald chairs, lung-motor, microscope, operating-room outfit, scales, and all kinds of office supplies and furniture, at a sacrifice for quick sale. Address 410, care of this office.

LABORATORY TECHNICIAN WANTS POSITION

A young woman desires a position in a doctor's office or hospital, 3 or 4 hours a day, in Minneapolis or St. Paul. Thoroughly experienced in Wassermann, Blood Chemistry, and routine laboratory work. Address 411, care of this office.

PRACTICE FOR SALE

Unopposed village and country practice for sale in West Central Minnesota, amounting to \$5,000 or \$6,000 a year; no competition; practice established 18 years. Am retiring on account of poor health. Small stock of drugs included in the deal. Price, \$500. A snap for the right man. Address 412, care of this office.

OFFICE FURNITURE FOR SALE

Allison table, golden oak finish, \$95.00. Floor instrument case, four beveled plate-glass shelves, each $18\frac{1}{4} \times 13\frac{1}{4}$. Wall instrument case, four plate glass shelves, $22\frac{1}{4} \times 7\frac{1}{4}$. Address 413, care of this office.

TWO ENGINES FOR SALE.

One electric engine in good condition, \$80.00, and one foot engine for \$10.00. Address Dr. L. R. Sweitzer, 607 Lowry Building, St. Paul.

OFFICE POSITION WANTED

Young woman with ten years' experience desires position as assistant to doctor having large general or surgical practice in Minneapolis. Can do routine laboratory work, nursing, stenography and bookkeeping. Address 414, care of this office.

OFFICE FURNITURE FOR SALE

1 McDonald Examining Chair, leather upholstery. \$50.00
1 Allison Table, Style 2130, Early English finish. 90.00
1 Allison Table, Style 2130, Golden Oak finish... 95.00
1 Leucodescent Lamp, 500 c.p., with colored screens 75.00
Address C. F. Anderson, 816 Pillsbury Bldg., Minneapolis, Minn.

OPENING OR ASSOCIATION WANTED

An unmarried physician with considerable experience in general practice, especially obstetrics, desires an opening or association with a busy practitioner in Minneapolis. Prefer to become associated with a firm doing eye, ear, nose, and throat work. Best of references as to character and ability. Address 409, care of this office.

UNOPPOSED PRACTICE FOR SALE.

In Southwestern Minnesota, an unopposed \$10,000 general practice in modern town of 700. Large territory; thriving community; good roads; collections 99 per cent. Residence and office combined, \$3,200. \$800 cash, balance to suit. If you want plenty of work and a good location, write for further information. Address 408, care of this office.

LOCUM TENENS WANTED—PARTNERSHIP IN VIEW

I want a young man to take charge of my practice in a town of 3,000 in Central Minnesota, with partnership in view. Practice will exceed \$15,000, and will soon reach \$20,000 or more a year. Address 405, care of this office.

LOCUM TENENS WANTED

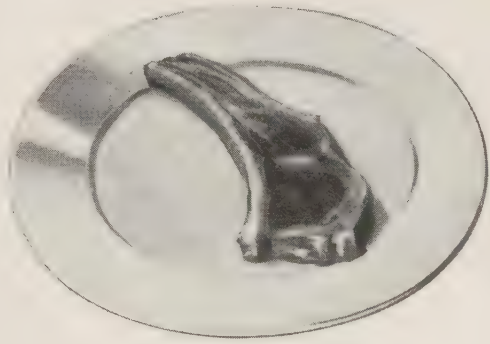
To take charge of a large country practice from the latter part of November until March. Address 403, care of this office.

X-RAY APPARATUS FOR SALE

Almost new, a Fisher type H5 high frequency A. C., two tubes, 8-inch and 6-inch. Violet ray attachment. All in perfect working condition. A \$442.00 outfit for sale at \$285.00. Dr. J. K., 1007 Donaldson Building, Minneapolis, Minn.

PRACTICE FOR SALE.

In a prosperous Minnesota town of 2,500, on main line of the Soo Railway; mixed class of people with Scandinavians predominating. Have for sale half interest in hospital, which is well equipped, including first class x-ray. Cash business running from \$8,000 to \$10,000 per year. Sale price, \$6,000. Good reason for leaving. Address 406, care of this office.



12 Dishes for the cost of one chop

One can serve 12 dishes of Quaker Oats for the cost of a single chop.

Quaker Oats costs $6\frac{1}{2}$ cents per 1000 calories. Meats, eggs and fish will average about nine times that.

Quaker Oats forms almost the ideal food in balance and completeness.

Quaker Oats yields 1810 calories per pound. Round steak yields 890, eggs 635.

Both right feeding and economy call for Quaker Oats at breakfast. And there is no dish more inviting.

Quaker Oats

Extra-flavory flakes made from queen grains only—just the rich, plump, flavory oats. We get but ten pounds from a bushel. This super-quality makes the dish doubly delightful.

The Quaker Oats Company

Chicago

TO THE MEDICAL PROFESSION

THE NATIONAL PATHOLOGICAL LABORATORIES OF CHICAGO, ST. LOUIS, DETROIT, AND NEW YORK are Diagnostic Institutions, ideal in equipment and personnel.

The Directors of the Laboratories are always at your service for personal cooperation in all diagnostic problems.

The following are a few items from the fee list:

WASSERMANN TEST (BLOOD OR SPINAL FLUID) - - - - - \$5.00

We do the classical test. Any of the various modifications will be made upon request, without additional charge. Sterile containers, with needle, gratis upon request.

EXAMINATION OF PATHOLOGICAL TISSUE - - - - - \$5.00

Accurate histological descriptions and diagnoses of tissues removed at operation should be part of the clinical record of all patients.

AUTOGENOUS VACCINES - - - - - \$5.00

We culture all specimens aerobically and anaerobically and isolate the offending organisms. Pipettes for collecting material for autogenous vaccines sent upon request.

ANTI-RABIC VIRUS -- FULL COURSE TREATMENT - - - - - \$25.00

As improved and made under the personal supervision of Dr. D. L. Harris. (U. S. Government License No. 66.) **YOU GIVE THE TREATMENT YOURSELF.** Sole Distributors. Telegraph orders given prompt attention. Write for Booklet.

X-RAY DEPARTMENT

Offers the highest class of consultation service on moderate fees. Appointments may be made from 9 a. m. to 5 p. m.

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PUBLISHER'S DEPARTMENT

A STANDARD SALINE LAXATIVE.

Measured by the extent of its use *Sal Hepatica* may be said to be *the* standard saline laxative of the country.

The Bristol-Meyers Company, of New York, make no extravagant claims for their product, for no physician need be told what this product is or what it will accomplish. *Sal Hepatica* is simply a saline laxative put up in palatable and attractive form and deserves to be prescribed whenever a laxative is required.

BACTERIAL VACCINES (SHERMAN'S).

The organisms in Sherman's vaccines are grown on ascitic agar, which makes them more nearly conform to the biochemical construction of organisms responsible for human infections. They are the only vaccines produced on a large scale that are sterilized without heat. This avoids the possibility of destroying the delicate bacterial protein, which is so liable to follow from the heat-killed method of sterilization, and results in the production of a vaccine high in antigenic and keeping qualities. All vaccine suspensions are carefully counted and standardized so that a change can be made from one package of vaccine to another of the same kind with the same therapeutic response.

When, particularly in grave cases, valuable time may be lost in securing the variety of vaccines especially recommended, it is always advisable to use the vaccine at hand which contains the predominant organisms of the disease to be combated.

Infants and children who are very tolerant to bacterial vaccines should receive $\frac{1}{4}$ to $\frac{1}{2}$ the adult dose.

USED X-RAY AND ELECTROTHERAPEUTIC EQUIPMENT FOR SALE CHEAP

Many physicians buy used automobiles and often get real bargains, but the risk in such purchases is always great. Likewise many physicians buy used electrical apparatus, but here the risk is reduced almost to the zero mark if such apparatus is guaranteed by a well-known firm of good financial standing.

Such apparatus is offered medical men by F. L. and H. E. Pengelly, of Minneapolis, as set forth in their advertisement on another page. Our readers need not hesitate one moment to buy of this firm any used apparatus offered by it, for they do not misrepresent and they are responsible, and they are responsible without compulsion.

The line of apparatus offered by the Messrs. Pengelly (220 La Salle Building, Minneapolis) is an interesting one.

THE MILK PROBLEM A GREAT HEALTH PROBLEM

The distribution of milk in a great city is the greatest health problem of such city, and it is a problem ever present. No degree of vigilance on the part of health officers can solve the problem without the hearty, not the enforced, co-operation of the central distributing plant or plants.

Minneapolis has had, perhaps, as little trouble with this problem as any other city in the country, and has

enjoyed this fortunate condition for many years because the Metropolitan Milk Company, the great central distributor of the city, has obeyed the laws voluntarily and has even helped to make efficient laws in this line.

Physicians feel safe in recommending this company's milk.

THE RIGGS OPTICAL COMPANY.

The Riggs Optical Company, which has offices in nearly a score of western cities, is offering some attractive pieces of office furniture for opticians, two of which pieces are pictured in their page announcement elsewhere in this issue. This company is a wide-awake one; and all physicians, whether specialists or not, doing any optical work, should become acquainted with the house and should have their catalogue.

The company wants to know the needs of every physician in the West, and will cheerfully send information concerning their work to any physician.

WHO WAS JENNER?

If you were confronted with the statement that Edward Jenner, the discoverer of smallpox vaccination, was an English country gentleman, that he was not a doctor, nor had ever studied medicine, would you be able to say otherwise?

Most of you would probably reply that you believed he was a physician, basing your opinion more upon his association with medical subjects, especially smallpox, rather than upon accurate information. As a matter of fact he was a physician. He was born at Berkeley, England, and at an early age was apprenticed to Messrs. Ludloy, practitioners at Sudbury near Bristol. He remained with them for six years. It was during that time that the famous milk-maid incident is said to have occurred. A young country woman came to seek advice, and the subject of smallpox was mentioned in her presence. She is credited with the observation, "I cannot take that disease because I have had cowpox."

In his twenty-first year Jenner went to London to continue his professional studies under John Hunter, the famous anatomist and surgeon. He resided in Hunter's family for two years, becoming under his tutelage an expert anatomist and proficient pathologist. In 1773, he settled in his native village, where he acquired a large practice. In 1792, he decided to confine himself to medicine and with this in view he obtained a degree from St. Andrews. After years of study and observation on smallpox and cowpox, came the famous vaccination and inoculation of James Phipps, a healthy boy of eight. This successful experiment was followed by many others, and in 1798, he published his first memoir. In the beginning the practice of vaccination met with violent opposition, later seventy prominent physicians and surgeons of London signed a declaration of their entire confidence in it. In 1803, a royal Institute for the extinction of smallpox was founded and Jenner made the head of it. In 1858, a public statue in his honor was erected. From a universal scourge, through Jenner's discovery and its even partial application, smallpox has become one of the least feared of diseases. Through vaccination and revaccination with a safe, potent vaccine virus, it can eventually become a medical curiosity. When properly stored the vaccine virus of Eli Lilly & Co. is said to give a maximum percentage of "takes" in primary vaccinations and reliable findings in revaccinations.

KENILWORTH SANITARIUM.

It always gives us pleasure to speak a good word of Kenilworth Sanitarium, of Kenilworth, Illinois, a suburb of Chicago, for we regard it as a credit to the medical profession, as a place where mental and nervous diseases are treated with very great skill, and where patients uniformly find the hope of cure or improvement.

The staff, Drs. Brown, Kemp and Brown, are men of the highest standing in their specialty, and are a credit to the modern medical world.

X-RAY AND OTHER EQUIPMENT

Messrs. Noyes Bros. & Cutler call the attention of all Northwestern medical men to their unsurpassed line of electrical appliances. They are the Northwestern representatives for a number of manufacturers of the above goods, which have long been the standards in their respective lines, and the experts of Messrs. Noyes Bros. & Cutler will give all necessary instruction and directions in the use of such apparatus.

The Noyes Bros. & Cutler perfect guarantee goes with every piece of apparatus they sell, and, even better than this, they sell nothing but the best obtainable for the price paid.

THE MEDICAL PROTECTIVE COMPANY

If it were the policy of THE JOURNAL-LANCET to publish news items concerning suits for malpractice against physicians our readers would be surprised at the large number of such suits and at the small number of successful ones, and they would also learn that The Medical Protective Company of Fort Wayne, Ind., defends and wins most of these suits, practically all of them that are won.

The Company thus succeeds in defending the reputation of physicians, because their lawyers aid the local attorney of the physician sued to present his case in a proper manner.

This Company is worthy of unstinted praise for its honorable and successful work in behalf of the medical profession.

PROTEOGEN NO. 2

The thing we call "rheumatism" may be something else, but it is a reality, and a disagreeable one, that calls for treatment on the part of every man who practices medicine; and many a man's reputation is broken by failure to relieve it.

The Wm. S. Merrell Company claim that they have an abundance of clinical evidence to prove that their Proteogen No. 2 will relieve the symptoms and remove the underlying toxic cause of rheumatic affections.

As the Merrell Company is not given to extravagant claims, much less to doubtful ones, this remedy is well worth trying, especially as there can be no doubt that a trial will produce sufficient evidence to test the claim.

LISTERINE

Listerine takes its name from the father of antiseptics, and from the day it was put on the market, a half century ago, we believe, it has grown in popularity with the physician who prescribes it and the patient who uses it.

Listerine is a mild antiseptic lotion for use on wounds, as a gargle, a spray, or a douche, or as a mouth-wash.

It gives satisfaction because it is effective and is pleasant to use.

The Management of an Infant's Diet

Malnutrition, Marasmus or Atrophy

Mellin's Food
4 level tablespoonfuls
Skimmed Milk
8 fluidounces . . .
Water
8 fluidounces . . .

Analysis:

Fat . . . . .	.49
Protein	2.28
Carbohydrates	6.59
Salts . . . . .	.58
Water	90.06
	<hr/> 100.00

The principal carbohydrate in Mellin's Food is maltose, which seems to be particularly well adapted in the feeding of poorly nourished infants. Marked benefit may be expected by beginning with the above formula and gradually increasing the Mellin's Food until a gain in weight is observed. Relatively large amounts of Mellin's Food may be given, as maltose is immediately available nutrition. The limit of assimilation for maltose is much higher than other sugars, and the reason for increasing this energy-giving carbohydrate is the minimum amount of fat in the diet made necessary from the well-known inability of marasmic infants to digest enough fat to satisfy their nutritive needs.

MELLIN'S FOOD COMPANY,

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THE POTTENGER SANATORIUM

The above-named tuberculosis sanatorium is located in the beautiful foot-hills of the mountains forty-five miles from Los Angeles, and is the resort of patients from all parts of America and some from abroad. It is an institution of the highest attainable standards, where the treatment of the disease and the care of the patient is unexcelled, at home or abroad.

Of course all persons afflicted with tuberculosis cannot go to Monrovia, Calif., to receive the treatment given there, but all physicians in America should be familiar with the work done there and with the writings of the eminent Drs. Pottenger who conduct this sanatorium. Correspondence is solicited from every physician interested in this work.

ANGIER'S EMULSION

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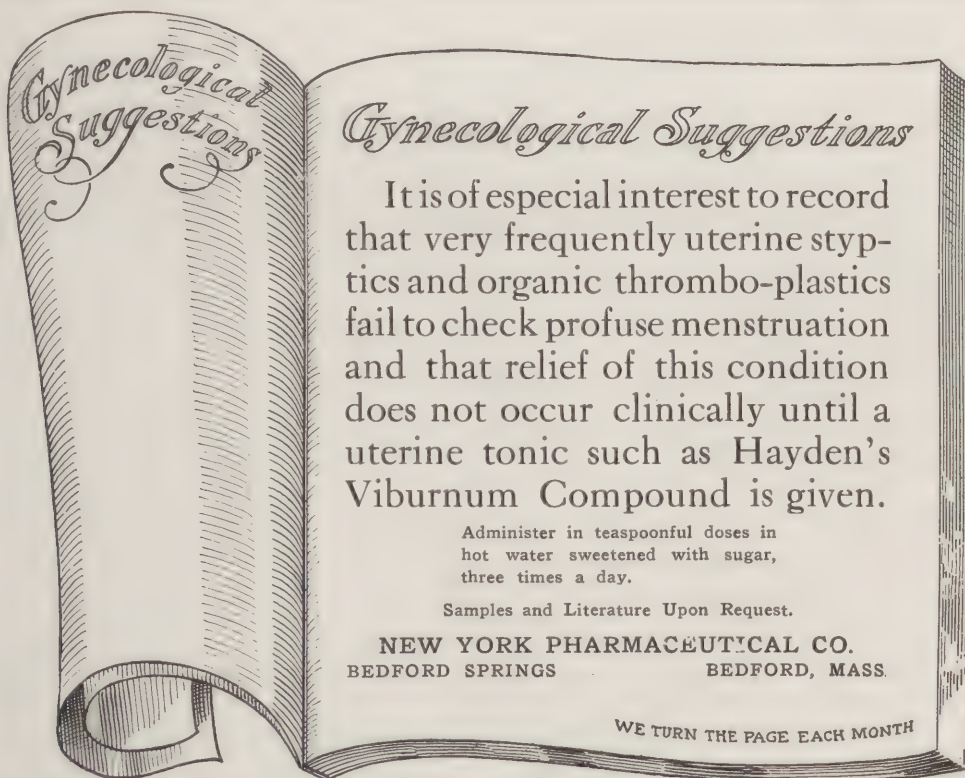
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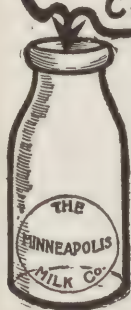
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E. A. PRINTY, M. D.
Director of Laboratory

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THE STATE HEALTH LABORATORY IN ITS RELATION TO THE PHYSICIAN AND THE STATE*

By JOSEPH C. OHLMACHER, M. D.
VERMILION, SOUTH DAKOTA

I welcome the opportunity to appear before this association because it permits of personal contact with many of the physicians of the state and the inauguration of personal viewpoints, which speak for understanding and better co-operation between the physician and the laboratory.

To outline the growth of the State Health Laboratory idea, or to attempt to summarize the scope of the activities of these laboratories, so well exemplified by the great good they have accomplished as functioning agents of the various State Boards of Health, would be time-consuming and not in keeping with the purpose of this paper.

When I handed the title of this paper to the Secretary, I intended to devote considerable space to the discussion of the relation of the laboratory to public health. Upon receipt of the official program of the Association, however, I noticed that we were to have at least two papers relating to matters I would have touched upon, so I have decided to largely curtail, or possibly eliminate, their consideration at this time.

What I want to do is to have an intimate, frank conversation with you about your own State Laboratory, that agency which functions, in co-operation with the physicians and the State Board of Health, in the interests of the people of South Dakota. That it has functioned well

is shown by its record since its organization, some eleven years ago.

About eighteen months ago I came to Vermilion as director of this laboratory. I was surprised and pleased at its size, the fine practical arrangement of its component parts, and its efficient and up-to-date equipment. Above all, I was gratified at the excellent record established for it under the able supervision of my predecessor, Dr. Mortimer Herzberg. It then became my ambition to maintain the high standard of excellence thus established. Whatever the verdict of those in position to judge may be, the fact remains that I have tried.

Thus far during my custodianship we have had a few complaints and some just and unjust criticisms. Both the complaints and the criticisms have revolved about our alleged slowness in rendering reports. All laboratory diagnosticians are familiar with unjust criticisms and complaints and sooner or later become immune to them. Just criticism is welcomed by most laboratory men, as, it being constructive, it tends towards better co-operation.

In explanation of these apparent delays, I wish to make the following statement, which must not, however, be accepted in the light of an apology. We have no apology to offer in this matter. We are anxious, nevertheless, to clear up any misconception along this line.

During the war and up to within a few months the mail and express services have been

*Presented at the thirty-eighth annual meeting of the South Dakota State Medical Association, at Watertown, May 21 and 22, 1920.

abominable. Even under normal conditions they are bad enough. Frequently a letter or specimen by express or parcel post would be sent us from some remote part of the state, and we would not receive it until two or even four days later. Our reports, if made by mail, might also be long delayed. Under such circumstances distressing delays in making our investigations and rendering our reports occur, are embarrassing, and may be more or less disastrous. Our records always show when a specimen is received at the laboratory and when the report is rendered. Lately we have gone to the extent of recording the exact hour and minute we telegraph a report, because here also we have had some unusual delays in transmission. Thus we are in position to more clearly fix the blame, should the occasion arise.

In order to clear up any misunderstanding on the part of the physicians of the state, I wish to say that we have adopted the following procedure in making reports: Blood specimens for the Widal test, sputum, pus-smears, urine and kindred specimens, if received at the laboratory not later than 5 o'clock, are reported the same day, and should the report be telephoned or telegraphed the physician generally gets it within an hour or two after the specimen is received. Suspicious throat cultures are reported anywhere from an hour to eighteen hours after their receipt. If such cultures show a growth upon their receipt, they are smeared at once, and, if positive, are reported within an hour; if negative, such cultures are re-incubated and reported later. Research conducted in the laboratory over a considerable period convinces us of the practicability of examining and reporting the results of cultures that have been incubated only five or six hours. This applies equally to the still invisible as to the visible growth. As yet, however, we have only reported the positives after such short incubation. The negative cultures are re-incubated for six or twelve hours longer. Should our findings be substantiated by more prolonged observation on our part, and corroborated by similar research in other laboratories, this method should be generally adopted, as a great saving of time will be accomplished in rendering reports on such material. In practically all laboratories cultures of this nature are incubated for eighteen or twenty-four hours, and sometimes even longer. In this connection I wish to remark that our State, in keeping with other States, requires two consecutive negative throat cultures before release from quarantine. In view of our present

light in this matter, this appears to be the only safe procedure, though it frequently does work a hardship upon the quarantined individual and family, as well as indirectly upon the attending physician. I cannot entirely escape the conviction, however, that in some instances the prolonged colonization of the diphtheria germs in the throat of the victim renders the germ avirulent and incapable of producing the disease. I certainly would be pleased to co-operate with any of the physicians of the state in carrying on research in this matter.

Because of the great increase in our Wassermann work we have, for some time past, been conducting our tests twice a week. Such sera as reach us not later than Tuesday or Friday morning are run, and, with a few exceptions, are reported, the same day. The exceptions are those sera that do not present clear-cut reactions or those showing strong anticomplementary reactions. These are set aside at ice-box or room temperature until the next day, when they are again read. It is surprising how frequently this latter treatment reveals the true nature of sera. I will speak later more in detail regarding our Wassermann test.

The greater part of our tissue specimens are reported the day following their receipt. In cases where the physician appears to be in a special hurry we employ the freezing method for running tissue, thus permitting of at least a tentative diagnosis within an hour. This diagnosis is usually controlled by a later examination of paraffin-embedded sections. We have excellent reasons to believe that the freezing method of tissue examination, though it has the advantage of largely eliminating the time factor, is not very trustworthy.

We occasionally receive specimens of pleural exudate, pus, cerebrospinal fluid, blood, and the like, with the request that we make a bacteriologic report. Not infrequently we find no organisms in smears from such material or we find organisms whose true identity is uncertain. In such cases we inoculate an animal, especially if we suspect the material of being tuberculous in nature, or we make cultures. We then write the physician and tell him what we have done and why we have done so. It is a very uncertain matter to grow germs from a specimen of cerebrospinal fluid or from whole blood unless it is cultured soon after it is obtained from the patient. This is probably because these media contain germicidal substances which seem to become especially active

under extraneous influences. About the only way of assuring success in the matter is to plant appropriate culture media with the material as soon as it is obtained from the patient. Blood, for instance, should be planted into a considerable amount of fluid culture medium, such as glucose broth, in which enough sodium citrate is incorporated to prevent clotting. Such cultures may then be sent to the laboratory for analysis and study. We will send such outfits to any physician requesting them, and will furnish directions for their use, if the physician deems it advisable.

In sending tissue to the laboratory for diagnosis, may we suggest the advisability of procuring as large a piece as possible. Small specimens may not include any of the tissue which stamps the character of the tumor, and histologic examination may give rise to a false conception. This point is well illustrated by an example that recently came to our notice. A physician sent us a piece of breast tumor and included a small lymph node removed from a site near the tumor. The tissue from the tumor proper appeared to be a simple adenoma. The most we could have said about it would have been that it was potentially malignant. The lymph node, however, presented typical carcinomatous infiltration. We occasionally encounter tissue in which the histomorphologic features assume no definite character and upon which we are unable to give more than a tentative or possible diagnosis. In such cases a good clinical history would aid materially in forming judgment that would be of some value to the physician. Such history is usually denied us. Why this is so I have never been able to learn. Some years ago I had the distinct privilege of doing some work under the supervision of one of the greatest authorities on tumors in this country, and it was his custom not to report on any specimen of tissue until he got the clinical data. Really, gentlemen, why deny the laboratory diagnostician such data, which, at the very least, will be a valuable asset as a part of the laboratory records? If the clinician is called into a case as consultant, he is given all the available data that may be of assistance to him in forming a valuable opinion. Is not the trained laboratory diagnostician in truth a consultant, and frequently a very valuable one? Then why deny him the same privilege, and, yes, the same professional courtesy, you accord your fellow practitioner?

It is a waste of time to send specimens of water to the laboratory with the request that

they be examined for typhoid bacilli. I say this here because we receive a considerable number of water specimens with this particular request. Under the most favorable circumstances, such as working with a water containing a maximum number of these germs, doing the platings, inoculations, etc., right on the spot, thus eliminating the time factor, which is so important in this matter, it is rare indeed to isolate this germ. The most we can do with water, even when it is sent to us in the proper containers and properly iced, is to determine the relative number of germs it contains, and its relative freedom from sewage pollution, by applying the so-called colon test.

In sending us pus from cases of suspicious gonorrhea, we like to have at least two smears. One of these we stain with methylene-blue and use it to control our Gram-stained specimen. We occasionally find this procedure very helpful.

We are having an increasingly large number of Wassermann tests to perform. Within the last few months the increase has been a little better than 100 per cent. From May 1, 1918, to April 30, 1919, we ran 540 tests of this nature. During the same period from 1919-20 we have performed 1,568 Wassermann tests. I attribute this increase largely to the efforts of Dr. Sherman Lull, Director of the Division of Venereal Diseases of the State Board of Health. Many physicians have just learned that we conduct free Wassermann tests in the interest of the citizens of this state, and I am sure that some are yet unenlightened regarding this matter.

Because of the interest generally manifested in the matter, I will give you some idea of how we conduct our Wassermann tests. We employ a modified test,—a sort of a cross between the original Wassermann and the Noguchi tests,—in that we use the antishoop hemolytic system of Wassermann and the acetone insoluble lipid of Noguchi as antigen. This method was in use by Dr. Herzberg before I took charge of the laboratory, and has proven most satisfactory to our special needs. The test has been altered to the extent of adding an anticomplementary control for each serum tested, and by adopting a modified method of ice-box fixation. Thus we place the tubes containing the sera, complement, antigen, and salt solution in the ice-box for three or four hours, completing the fixation of complement by the water-bath method applied another half hour. The amboceptor and the washed sheep cells are then added and the outfit incubated in the water-bath until the controls run

clear, which takes ten minutes to half an hour. Our readings are then made. We have adopted the anticomplementary control for each serum tested, as we are confident it eliminates a grave source of error. About 7 per cent of the sera we test with the ice-box method give, primarily, anticomplementary reactions. We say primarily because some of these tubes showing anticomplementary reactions, after standing over night at room or ice-box temperature, show complete or nearly complete hemolysis, whereas the tubes containing the same sera plus the antigen, which the anticomplementary controls do not contain, frequently show an entire lack of hemolysis. We believe we are safe in calling such sera positive.

Within the past eight months we have tested the comparative value of the water-bath method of complement fixation with the newer methods of sixteen-hour ice-box fixation, employing 1,125 sera for this purpose. The details of this report will be presented elsewhere. Suffice it to say that, in the main, our results conform very nicely to those of McNeil, Coca and L'Esperance, and Smith and MacNeal, in that the ice-box method adds considerably to the delicacy of the test, giving a greater number of positive reactions. We have found that the sixteen-hour ice-box method and the three-hour ice-box plus the water-bath method give practically the same results. We have thus adopted the later method, as it saves considerable time.

During extremely cold or hot weather, much of the blood we receive is hemolyzed. As a rule, it is not a very safe procedure to use such blood sera in making the Wassermann test. We now refuse to run sera in which much hemolysis has taken place, as we find it a waste of time, but we write for another sample. This source of trouble could be eliminated if the physician would adopt the following procedure: Draw the blood in the usual manner; slant the tube of blood and place it in a cool, but not cold, place for several hours or over night, being sure to separate the clot from the sides of the tube as soon as clotting takes place. Generally at the end of a few hours a goodly amount of clear serum will have separated from the clot. This can be poured into a sterilized homeopathic vial, which is then stoppered with a sterilized cork, and sent to the laboratory. Serum collected in this way is apt to remain in good condition for several days, and specimens can well be sent from any part of the state.

Thus far only a few of the physicians send us

any clinical data with their blood specimens. In view of the rather large number of Wassermann tests we are now making, such data will give considerable value to our records and offer a fairly definite means by which we may check our results. It makes no great difference to us whether we get this data before or after we render our report, just so we get it. Will the physicians here present kindly bear this in mind?

Some physicians have been kind enough to inform us if our results seem at variance with the clinical features of the case. To them we write that we would like additional specimens of blood, and advise that they send a part of the same sample to another reputable laboratory as a check on our results. We are pleased to say that in practically all instances of this nature our original findings have been sustained by additional tests made here and elsewhere. Of course we are not sanguine enough to believe that we have heard from all the doctors who find that some of our results are at variance with the clinical features of the case. Such a thing would be too good to be true. From the standpoint of the patient and the public the Wassermann diagnosis means a great deal, and, if there be any doubt in mind of the physician regarding the findings of any laboratory, it is his duty to submit other samples of blood for analysis, not only to the laboratory making the original findings, but also to one or more other reputable laboratories. The Wassermann reaction, especially the quantitative test, is of considerable importance as a control to antisyphilitic treatment. We will gladly co-operate with any physician of the state in this matter, without charge. As this test requires special steps in its performance, the physician, in submitting the serum to be tested, must notify us that he wishes the quantitative test made. Such specimens should be tested every two or three months during treatment, and every five or six months, over a rather prolonged period, after treatment has apparently accomplished its end.

There seems to be considerable misunderstanding regarding the purpose to which the laboratory containers, culture outfits, etc., should be put. Most emphatically they should not be employed for private purposes. They are solely the property of the State Health Laboratory, and to be employed only in connection with the work of that laboratory. We are always willing to supply special outfits, culture media, etc., to any physician wishing us to co-operate with him in any

manner in keeping with our function. Many outfits which the laboratory sends out are never returned. Most of these outfits are expensive, and to keep up the required supply has a tendency to exhaust our funds, which, at most, are not any too large. In this matter, as in other matters, we hope to have the hearty co-operation of the physicians.

With the idea of establishing the identity of chronic typhoid carriers in the state, and thus gaining some control over them, we conceive it a good plan to examine the feces and urine of all typhoid convalescents. In cases where the typhoid bacilli are found in either or both of these discharges, steps should be taken to get rid of the infecting agent, and measures adopted to reduce to the minimum the danger of these carriers spreading the infection. That we may get some definite data regarding the incidence of carriers, thus forming a basis for more logical means of preventing typhoid fever, we hope to have the support of the physicians of the state in conducting some research along this line. Any physician caring to co-operate with us in this matter should write to us and we will gladly make arrangements to carry on such tests as best fit the case.

Though I may have occasion to discuss the matter again, and more in detail, I want to say something regarding the establishment of branch laboratories. South Dakota has an area of over 77,000 square miles and a population of only about 700,000. Except in the eastern and southwestern part of the state the transportation facilities are bad. Thus timely communication with the laboratory is impossible. To meet the demands of the extreme northern and the western parts of the state, branch laboratories should be established in some cities easily accessible to the adjoining territory. Of course such laboratories should be under the supervision of the main laboratory, intimately co-operating with this laboratory. Each of these branch laboratories should take care of the specimens of sputum, pus-smears, throat cultures, Widal's, and the bacteriological examination of water in its territory. In North Dakota the branch laboratories are also a functioning part of the City Health Board, conducting such tests as are required by these health bodies in the interest of the city, such, for instance, as the supervision of the milk and water supply. Grants from the city where the laboratory is situated are made, such grants being applied to the support of the laboratory, including the salary of the person in charge. This

strikes me as an excellent arrangement, and one that may well be adopted by our state.

In conclusion, I wish to thank the many physicians of the state who have given their hearty support to the work of the State Health Laboratory. We are all working in a common interest, the betterment of health conditions in South Dakota. The concerted, concentric attack on many health problems of the day is bound to win. Let us then get together and stay together in the matter.

DISCUSSION

DR. I. PEMBERTON P. HOLLINGSWORTH (Sioux Falls): Dr. Ohlmacher has shown the scope of his work and pointed out the difficulties connected with laboratory work. These difficulties, I imagine, are met with in any state health or municipal laboratory. His Wassermann work is well checked up, and I wish to compliment him on the thoroughness of his work. His work has been well done and is satisfactory.

He mentioned the establishment of branch laboratories. From my experience with state and municipal laboratories, the rule has been that the state laboratory acted as a court of appeal; that where there was any question raised about the work in a municipal or city laboratory, we appealed to the state laboratory as the deciding factor. I think if our city laboratories that are being established throughout the state will establish branch laboratories, and they will work with the state laboratory much more could be accomplished.

The essayist spoke of the condition in which blood was received at the laboratory for examination. We have great difficulty in doing Wassermann because blood is not received in the proper manner. Blood sent in from one of the hospitals was supposed to have been placed in a sterilized bottle, the bottle being covered with some sort of oil so that it had quite an odor. We had to throw away that blood. I think most of the people who are doing Wassermann work throughout the country find that one of the chief factors in faulty findings or bad results is the infection of the blood, which takes place locally at the time the blood is taken. The blood is put in a dirty container, or the man is not clean in the method of taking the blood. I have seen men in Sioux Falls take a syringe and rinse it out with hot water; they infect the blood when they take it or hemolyze the blood afterward, due to the water in the container, which they get in the syringe.

Dr. Ohlmacher drew attention to the importance of not reporting on a negative throat culture after eight or nine or twelve hours. Some men have drawn attention to, and have shown the importance of, re-incubating the throat culture and re-examining it at the end of twenty-four hours. Frequently those are simple young forms of organisms which appeared in the negative culture, which the next day show the characteristic morphology and staining characteristics that were positive of a virulent organism.

The state laboratory in this work cannot cover in a satisfactory manner some of the local conditions which must be covered by a municipal laboratory. For instance, Professor Whittaker yesterday drew attention to the importance of field work in conjunction with

laboratory work, checking up the work of one with the other, which is of very great importance. The state laboratory, unless it has a field personnel, which it does not have at present, and which it should have, cannot maintain field inspection of water, milk, and food supplies, which the local men can to a more or less extent. Unfortunately, Dr. Ohlmacher is yet greatly hampered by lack of a trained personnel.

Yesterday reference was made to having a school for nurses, visiting public health nurses. It is just as important, if not more important, to establish a school for sanitary inspectors so that we may obtain trained men

for that position. It is not easy to have things brought to the laboratory by inspectors that do not know what they are looking at or looking for. Many of these men are appointed on account of their political affiliation, and until we divorce these men from politics we shall not get scientific inspection.

Dr. Ohlmacher spoke also of the kind of work which should be done in municipal laboratories. He covered that phase of the subject very thoroughly. The relation of the state to the municipal laboratory should be that of the lower to the higher court, and we should use the state laboratory as a consulting laboratory.

GASTRIC AND DUODENAL ULCERS*

By C. W. SCHOREGGE, M.D.

BISMARCK, NORTH DAKOTA

Lesions in the upper abdomen are diagnosed with less assuredness than those of the lower. In a recent report on errors in abdominal diagnosis based on autopsy statistics, it was found that the affections in the upper abdomen had not been differentiated in 20 per cent of the cases, the diagnosis of ulcer of the stomach and duodenum having been missed as frequently as that of diseases of the gall-bladder and pancreas. The following is a brief review of the clinical records of a series of 90 gastric and duodenal ulcers operated on in the Quain & Ramstad Clinic. All cases in which there was question of malignancy were excluded from this study.

The etiology of gastric and duodenal ulcers is not definitely determined, but from clinical and experimental research writers incline to the opinion that it is due primarily to infection. However, all agree that anything tending to destroy the integrity of gastric and intestinal mucosæ, such as faulty diet, local irritation, and trauma, is a predisposing cause. When an ulcer is once developed, the gastric juice is a source of constant irritation, and consequently prevents healing.

That chronic peptic infection plays an important part in the etiology of gastric ulcer has been proven beyond all doubt. The focus may be anywhere in the body. Obvious infection about the patient's mouth is of startling frequency in ulcer cases. Our earlier records, unfortunately, do not show exact conditions of the teeth and tonsils, yet it was evident that at least 80 per cent of our cases were badly in need of dental attention.

Associated intra-abdominal lesions of infec-

tious origin in duodenal cases were as follows: About 18 per cent had, in addition to the ulcer, cholecystitis; 8 per cent had cholelithiasis; and 25 per cent had obvious evidence of appendicitis. Furthermore, 7 per cent had had previous operations for relief of gastric symptoms without results. These patients were operated on for gall-bladder and appendix affections one-half to one year before they submitted to gastric surgery.

In gastric ulcer we found cholecystitis in 6 per cent, cholelithiasis in 6 per cent, chronic appendicitis in 22 per cent, and 11 per cent had been operated on for appendicitis and gall-bladder disease within one and a half years without relief. From the history of these previous operative cases we find each had enough symptoms to suspect gastric pathology before their first operation, but this evidently had been overlooked. This is not always due to faulty diagnosis, but the patient may have had a definite attack of gall-bladder colic or appendicitis with stomach disturbances, and insist that these are only exaggerated attacks of the former trouble. It is exceedingly difficult to obtain old clinical history in the presence of an acute painful lesion. On close questioning, especially if the patient is not cured, a definite stomach history can usually be obtained.

The age at which ulcer occurs was formerly considered that of the young adult. Recent writers have described them in the aged as well. The oldest in our series of duodenal cases was 66 years in the male and 53 in the female, the youngest 19 years and 22 years, respectively. The average age in the duodenal cases was 38 years in males and 40 years in females. The oldest gastric ulcer patient was 69 years and the youngest 17 years. Some writers report ulcer

*Presented at the thirty-third annual meeting of the North Dakota State Medical Association, at Minot, June 15 and 16, 1920.

occurring under the age of 10 years and one of our very recent cases (not included in this series) was a girl of 14, who gave no gastric symptoms until she had almost complete stenosis.

The average duration of gastric symptoms was nine years in duodenal cases and eight years in gastric. One striking feature in this series was this: the older the patient the shorter the duration.

In considering the relative frequency of ulcer, our gastric cases slightly outnumbered the duodenal. It is difficult to find the reason for this unusual condition in our clinic. We feel that diligence in the search for the lesion has not been at fault, but believe it is a real condition of things in our section of the country. Both duodenal and gastric lesions were more often found in the male than in the female and in a ratio of 2 to 1.

Pain is the chief complaint. A typical ulcer pain develops after eating at an interval varying according to the location of the ulcer. It is relieved by alkalies or food, and occurs in definite attacks with intervals in which the patient is free from pain. It is now generally believed that the pain is due to the gastric tension, rather than to the abnormally high acidity. The increased gastric peristalsis is probably due to the stimulation of the afferent nerve endings in the floor of the ulcer. Ulcer history is only a history of hyperacidity, and the hyperacidity causes the pain indirectly.

It is not the location of the pain that is of diagnostic value, but the time of its appearance and how it is relieved. Fifty-two per cent of our duodenal cases gave typical ulcer histories; 20 per cent complained of flatulency, but no pain, the fullness varying from one to three hours after meals. These patients frequently attributed their symptoms to their persistent constipation. Fifteen per cent complained of stomach distress coming on at any time with no relation to meals. In the last type the history is always difficult of interpretation, but is always suggestive of gastric pathology. Over 60 per cent of the gastric ulcer cases gave a history of late pain, corresponding closely to the classic duodenal picture; 15 per cent had pain immediately after meals and had fear of food; and 16 per cent had definite attacks of pain with sudden relief followed by symptom-free intervals of variable duration, suggesting an attack of gall-bladder colic. In most of our cases the symptoms appeared seasonally, more often in the spring.

These findings indicate the difficulty one encounters in attempting to localize the ulcer from the history alone. Symptoms in pyloric ulcer do not vary much from those in the duodenum. Patients with duodenal ulcer usually have more relief after eating heavy meals, while those with gastric ulcer find more relief from small meals of a bland diet, heavier meals causing more pain and vomiting. The pain usually lasts longer and is associated more frequently with distension and eructation in those cases where the attacks, or symptom periods, have come on with short intervals. Periodicity is more marked in duodenal than in gastric ulcer.

Vomiting usually relieves the pain, especially in gastric lesions, but it is not essential for diagnosis. In our duodenal cases it occurred less frequently in about 30 per cent than in the gastric, where it was present in about 60 per cent. Hematemesis was a less frequent incident in our series than in the published reports we have studied. It had been present in 10 per cent of the duodenal cases and in 15 per cent of the gastric.

Occult blood in the stools is not primarily of importance because there are too many possibilities of error and examinations are not usually repeated long enough with each patient to be of accurate value. We have been able to demonstrate blood in the stools in about 10 per cent of the duodenal ulcers and in about 13 per cent of the gastric.

Constipation was fairly constant in the duodenal cases, but present in only half of the gastric. Diarrhea had occurred in two cases.

Gastric analysis was made in all cases except where it was contra-indicated. In our experience it is of only limited value. It has been frequently demonstrated that a typical ulcer history with hyperacidity is not always conclusive that ulcer exists, for ulcer may be found with normal or hypo-acidity. Hyperacidity was found in 50 per cent of the cases in duodenal lesions, hypo-acidity in 15 per cent. The acidity was normal in 35 per cent. In gastric ulcer hyperacidity was found in 36 per cent, hypo-acidity in 14 per cent, and normal in 47 per cent.

Physical examination of ulcer has been usually negative, no definite findings being elicited which would be definitely seen or felt. Masses may occasionally be felt in very thin individuals, but these are more likely to be malignant tumors, which would be an indication for an exploratory laparotomy. Occasionally there would be tender

areas in the epigastrium or right hypochondrium, but this would vary with the sensibility of each patient.

The Röntgen ray is of very great importance and is essential in the diagnosis of ulcer. It is especially of value for localization. It gives information as to the peristaltic action, the outline of the duodenal cap and defects in the stomach walls, and in this way confirms the diagnosis of ulcer. The *x*-ray examination is of real value only when it is performed by a properly trained man. Röntgenograms may have defects and innumerable peculiarities which can be interpreted only by experienced specialists. Again, the most important part of the *x*-ray examination is the fluoroscopic. The manipulations necessary for this work cannot be acquired even from observation. Liberal personal experience is essential. The results of the Röntgen examination must always be associated with the clinical history to make a definite diagnosis, and the examination oftentimes must be repeated. In our series the *x*-ray had diagnosed definite pathologic lesions in 85 per cent in the duodenal cases and in 88 per cent in the gastric.

The treatment of gastric and duodenal ulcer is a matter of good judgment. It may be either medical or surgical, or a combination of both. Medical treatment is usually considered first in uncomplicated cases. Formula feedings or the method used by Sippy seem to be the most rational medical treatment, and to give in many cases very decided benefit. The Sippy treatment consists of frequent feedings with a largely protein diet, beginning with milk and eggs and administration of alkalis between the feedings.

However, it seems that most ulcer patients sooner or later come to surgical treatment. One can never be certain that an ulcer is healed, even though it may rest free from symptoms for a longer or shorter period. Many of our cases had been "cured," and "cured" repeatedly, by medical treatment. This fact has made us look with an open mind upon all ulcers cured medically and dietetically. We have a very definite conviction from our observations that surgery offers far more to these patients than does any form of medical treatment. A happy combination of proper surgery with purposeful dietetic and medical supervision in the after-treatment gives the best results. The duration of the affection and the *x*-ray examination are often the guides by which surgery becomes indicated. Where there is obstruction present or where there are re-

peated exacerbations of gastric symptoms or when perforation is taking place, surgical intervention is the only rational treatment. Twenty-seven per cent of our gastric cases and 5 per cent of the duodenal were perforating at the time of operation.

Another argument for radical surgery in gastric ulcer is the possibility of beginning malignancy in the ulcer. We have knowledge of four of our gastric ulcer patients who died from carcinoma of the stomach from two to four years after operation. Examination of the ulcers at the time of operation had failed to indicate anything of a malignant nature. Excision of the ulcer was done in one and simple gastro-enterostomy in the other three of these four cases. All four had been under medical treatment at various intervals for several years. Earlier surgical treatment would no doubt have rescued some, if not all, of the four from the cancer death.

The choice of operation depends entirely upon the condition of the patient, the location and extent of the ulcer, and, last but not least, the ability of the surgeon. The best results are obtained with the patients who seek early relief, no matter how mild or severe the symptoms.

Deaver recommends excision of the ulcer followed by gastro-enterostomy; Balfour advises excision by cautery with gastro-enterostomy, especially when the ulcer has been the cause of hemorrhage. In only one case following a simple gastro-enterostomy was it necessary to re-operate and excise the ulcer before a cure was effected. Moynihan advises gastrectomy, believing that then there is little chance, if any, for recurrence of the ulcer and lessening of the danger of malignant change.

In our duodenal series posterior gastro-enterostomy with pyloric occlusion was performed in 28 per cent of the cases and simple gastro-enterostomy in 67 per cent. The immediate results were about the same so far as relief from symptoms was concerned, both giving good results. Pylorotomy with posterior gastro-enterostomy gave the best results in pyloric ulcer. Practically all the cases were given immediate freedom from all gastric trouble. This operation was performed in six of the gastric lesions. Posterior gastro-enterostomy with pyloric occlusion was done in 21 per cent of the gastric cases with good results, 95 per cent having immediate relief. Posterior gastro-enterostomy was

performed in 44 per cent with favorable results in 83 per cent. Excision of the ulcer alone was done in 16 per cent with only 65 per cent of immediate relief. Pyloroplasty in five cases gave unsatisfactory results. Partial gastrectomy in four cases proved satisfactory. There were four deaths in our series, one from uremia and three from pneumonia.

As to details of technic, the following points only will be mentioned: All gastro-enterostomies were made with a short loop and by placing the opening in the stomach at the most dependent portion. A few interrupted linen sutures were used in all cases as a reinforcement between an inner chromic and an outer tannic catgut running suture. The linen sutures were carefully placed

so as to avoid as much as possible their contact with the gastric mucosa, and to our knowledge we have not had a peptic ulcer develop. Most gastro-enterostomies were closed by a sewing-machine stitch with a special needle devised by Dr. E. P. Quain, which assures absolute hemostasis and a saving of time.

A questionnaire sent to all of these patients failed to bring complete answers from more than two-thirds of the series in time for this paper. From the information obtained we were gratified to learn that only four patients were more or less dissatisfied with their present condition. Of these, two had had acute hemorrhages some months after operation, but the associated symptoms were not those of chronic peptic ulcer.

COUNTY HEALTH OFFICERS IN MINNESOTA

BY CHARLES E. SMITH, JR., M. D.

Secretary and Executive Officer of the Minnesota State Board of Health
SAINT PAUL

In Minnesota authority is given to the State Board of Health to exercise supervision over the activities of local health organizations throughout the state. In conformity with such prescribed supervision when untoward conditions are reported as occurring in a given locality, an epidemiologist, a sanitary engineer, a field physician, or an administrative agent is sent to examine into the situation. This is of course dependent on the question as to whether or not the situation arising or complained about, from the point of view of preventable diseases, sanitation, venereal diseases or vital statistics, seems to require such personal attention. Once on the ground the representative from his investigation advises what steps shall be taken, but in many instances he finds it necessary to initiate measures himself, the local machinery being insufficient to cover the given needs. In the growth of population and in the increase in the complexity of living conditions, such procedure becomes increasingly difficult.

Minnesota has a population estimated for 1920 at 2,383,371, and an area of 84,682 square miles. It is, roughly, 360 miles from the northern to the southern border and from 200 to 350 miles east and west. It is divided politically into 86 counties and further subdivided by law into sanitary districts, where each township, village, and city constitute separate units. The sanitary districts number about 2,500, and are headed by

medical men in about 950 instances. Thus 1,550 districts have no medical health officers despite the law requiring them. The sanitary districts vary from 7 to 85 per county.

These figures are given to show how great is the task of supervision. It is noted that all these medical health officers are practicing physicians serving as health officers for salaries varying from nothing at all to \$600 a year, leaving out of consideration for the time being the three large cities. Some of these physician-health officers are supported by local ordinances in varying degrees of applicability to health situations, and some municipalities have merely charter provisions making possible the adoption of ordinances. The state health laws and the regulations of the State Board of Health of necessity must be broad in application and generous in scope. It is possible for the State Board of Health to pass regulations of local application, but the elaborateness of the procedure necessary to adopt regulations makes it at times impractical to start the process, the indication to be met having passed during the period of initiation. In order that the long arm of the State may reach effectively over its entire domain and in order that the authority of the State and its powers may be "stepped down" in application to each locality successfully for amelioration of untoward health conditions, some system of local representation should be devised on a larger basis than the single

sanitary unit. Two plans present themselves whereby a local representative can be secured for groups of such units, the district health-officer plan, and the county health-officer plan.

District health officers have been tried in some of the smaller states. Such officers are representatives of the state health body, paid by it and are really part of it. As such a plan develops, the burden put upon the State for maintenance of such a system soon becomes impossible to bear, and the plan fails. In the main such criticism seems justified, and the plan, on account of the geographical area of Minnesota, seems impractical.

The county health-officer plan, however, does not offer itself to a like criticism. In this state the system of civil government is a combination of the township system, so well-known in the East, and the county system, better known in the South. Certain salient features of each plan are retained and correlated from the smaller unit to the larger,—township, county, and state. Whatever reasons justify the organization of a state health body also justify that of a county body on a smaller plan. It must be recognized, however, from the economic viewpoint that the enforcement of health laws in specific cases is a community problem and belongs to the smaller unit.

Recognition of this principle and a carefully worked out plan of such graduation of authority, besides easing the central administrative problem very markedly, will bring all health measures closer to the people and assist them in the matter of healthful life, which should be very close to their hearts. This is particularly true in all matters pertaining to the health of children.

The financial results to be obtained from such an investment as would be necessary to institute a system of county health officers must be considered. Some may not grant that the administrative and educational profits would be sufficient to justify such expense as would be necessary. The direct benefit to the people must be shown. In the section of the country in which Minnesota is placed the diseases most frequently met are those of the air passages. It is not easy to show financial results in the control of these diseases with the methods which are now at our command.

By better supervision of the sanitary units, which would be made possible by a county health-officer system, we can look forward to the day when improved water supplies and adequate sewerage systems are supplied to every community large enough to stand the expense, and when

improved milk supplies benefit the general living conditions of the community. These are steps in the direct prevention of disease, not merely in the prevention of spread of disease.

By improved sanitary conditions the typhoid-fever death-rate will drop, and a marked reduction can be expected in deaths from diarrheal diseases, particularly among infants under five years of age. It is not unreasonable to suppose also that a marked lessening of the morbidity and mortality from tuberculosis would accompany such improved living conditions. At the present time, roughly, one death per county from typhoid fever is expected. If this death alone could be eliminated there would be a saving to the community of the value of a human life, roughly, seven thousand five hundred dollars. In addition to this the ratio of deaths to cases must be considered. For every death that occurs from typhoid fever nine cases are also expected to occur. On an exceedingly conservative estimate should half of these cases be eliminated a saving of at least twenty-five weeks of sickness would result. If the costs of sickness in both money expended and wages lost can be conservatively estimated at one hundred dollars, an additional two thousand five hundred dollar saving to the community is noted. The saving from the death-rate in other diarrheal diseases cannot be easily estimated, nor can that from tuberculosis. These savings are too theoretical, but it must be granted that some such saving will occur.

The laws of the state provide for the appointment of a county health officer, but his jurisdiction is limited to unorganized townships in the county; they further provide for such duties as may be imposed upon the county health officer by the State Board of Health. If an amendment to this law could be secured on a permissive basis providing for the salary of a full-time health officer for a county, providing further for such assistants, in the person of nurses or deputies, as may be necessary to him, the groundwork would then be laid. The field of activity of such an individual could be directed through instructions from the State Board of Health. For the townships to agree to the appointment of this individual as the medical health officer for each township, and supply part of his salary in this way, is the next step.

It is reasonable to expect that one-half the costs of the individual in question could be supplied by the townships and villages in the county (the county should bear its half), in conforming with the law for necessary help in the control

of communicable diseases. Possibly about one-quarter of the cost of putting this plan into effect as a demonstration in a few of the first counties to undertake it, can be secured from the International Health Board, as has been done in some other states. This would provide a very excellent plan of action in certain communities. This health officer not competing with the practicing physicians, not a resident of the given community, and not dependent upon the good-will of his patients for a living, would be free to enforce the regulations of the State Board of Health on a much more efficient basis than is now the case. It would not be necessary to build up in each of the eighty-six counties a full-grown health machine, as the necessary technical information and laboratory examinations could be supplied by the state health body. Where a county health officer might need assistance in enforcing the law or might need direction from the central body this could be given him in the same way in which representatives are now sent out from that body, and the plan would have an added advantage over the present system by leaving some person definitely on the job of seeing to it that the recommendations and work once instituted did not lapse. Such a health officer provided with nursing assistance and lay assistance sufficient to carry on the non-technical work could cover all

health conditions within his jurisdiction. The examination of school children would be supervised by a medical man; the activities of the county nurses in the various fields would have the advantage of the same sort of supervision. Epidemic conditions would immediately call for the presence of this medical health officer at the scene, and, under his guidance with such technical assistance from the state health body as might be necessary, would be controlled much more satisfactorily than by the system now in use.

Such, in brief, is the situation for which it is proposed to seek remedial measures in the way outlined, before the next legislature. A simple bill permissive in character will be introduced, and it is hoped thereby to provide for the sum of money needed in each county for the initiation of a scheme of county health officers. Through the detailing of this plan to the various counties it is hoped to secure moral assistance from the people who will be most likely to be benefited. It is admitted that the scheme is impossible of execution for the entire state within any specified time, but it is hoped that, with the necessary interest and efforts to make it legally possible, the plan can be put in operation in one or two counties within a very short space of time to grow and develop as the needs of the situation may demand.

CLINICAL ASPECTS OF PULMONARY TUBERCULOSIS*

By JULIUS O. ARNSEN, M.D.
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Recent reports and opinions of clinicians indicate that, in spite of the active propaganda and organization combating the disease, tuberculosis continues to be a great problem in medicine. Although it is a disease of great incidence and common in its occurrence in the practices of physicians, nevertheless in many cases it is not recognized until it has reached an advanced stage. Personal experiences and the experience of others in the profession have brought the conviction that we as physicians are partly responsible and that we must be keener in considering this condition and learn to recognize its early manifestations. Most of our failures can be ascribed to the fact that use is not made of all of our facilities of examination. If we would employ the methods of physical examination properly there is no ques-

tion that few early cases of tuberculosis would escape our attention. When one realizes that a few weeks' delay may mean irreparable harm to the patient, it certainly is incumbent upon us to make an extra effort to improve our observing powers. These remarks are in no sense those of an expert in tuberculosis, but the results of everyday general practice.

It is generally conceded that, with rare exceptions, tuberculosis is the result of childhood infection. Finding its way into the body most often by the way of the respiratory or alimentary tracts, it becomes localized by the defensive agencies of the body in the nodes of the lymphatic system, from which foci it enters the blood-stream at some subsequent period. The bacilli then may become deposited in any tissue of the body, and begin the pathological processes which characterize the clinical manifestations of

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the disease. Early the process is constructive with consolidation taking place, followed by caseation and finally destruction. In a localized lesion there is seen an extension of the process by contiguity, and this feature is sufficiently characteristic to differentiate it from other pathological lesions. It is well known that in childhood pulmonary localization is uncommon, while in adults the disease shows a remarkable predilection for the lung and the apices in particular. The reason for this apparent disparagement is not now a settled question, but Pottenger reasonably accounts for it on a physiologic and anatomic basis. Physiologic and anatomic studies show that the thoracic cavity in childhood tends more to the round type, the costal rings being on a plane more nearly at right angles to the plane of the spinal column, thus making the diameter of the chest more nearly uniform in its various planes. In addition to this the lungs are relatively of lesser capacity. As the individual attains maturity there is a decided tendency for the anterior border of the costal rings to descend, with resultant flattening of the upper chest. At the same time, especially at the age of puberty, there is a great growth of the lung. With the development of diaphragmatic breathing the lower lobes of the lungs have the greatest degree of movement, which grows less as we approach the apex. The conformation of the chest produces pressure on the upper portions of the lung, and the limitation of movements tends to produce a less active blood and lymph circulation. Thus not only is the blood-stream slowed, but this condition operates to reduce the nutrition of the part. Now, these conditions are favorable for the metastatic development of any infectious process, and the tubercle bacillus, liberated into the circulation, finds itself arrested long enough to set up a local reaction and the beginning of its pathologic process. This process may go on to destruction or become a healed lesion, and may be repeated at indefinite intervals, this same focus or new foci developing.

From this argument it will be seen how important the history in a given case must be. In obtaining the history one must clearly bear in mind the necessity of establishing a history of contact, especially the evidence of suspicious pulmonary disease in the immediate environment during the years preceding. In adults this is more important than a history of recent exposure, unless the exposure is a constant association with an open case of tuberculosis, when large doses of tubercle bacilli enter the system and break down the body resistance. It is uncom-

mon, when one considers the numbers so employed and exposed, to find tuberculosis developing in professional attendants upon tuberculous patients. It is not sufficient to simply ask the patient if any member of his family has died of tuberculosis, as is so often done, but the examiner should systematically and painstakingly search the history for the evidence he seeks.

Particular attention should be paid to the experiences in illness which the patient has had. Tuberculosis is essentially a chronic disease. It has its beginning early in life and is prone to react to extraneous influences and local disturbances. Thus from time to time it will "light up" and show exacerbations of an acute nature with marked reactions on the part of the patient. The defenses which the body develops for a time will overcome these recrudescences and limit the process, and apparent good health will ensue. These acute exacerbations are most often unrecognized, and they will be referred to as attacks of some minor infection and often treated accordingly; therefore suspicion is increased if a suspected case gives a history of an irregular succession of vague infections during his past life.

Patients often complain of symptoms which may be general or local in character. Malaise and limited endurance frequently bring the patient to the physician. Nervous irritability is a common complaint, it being noticeable to the patient that he no longer exercises his usual patience and becomes more easily irritated. This class of symptoms leads to the diagnosis of neurasthenia in many instances.

The toxemia causes interference with the digestive juices, and tends to decrease the motility of the gastro-intestinal tract with the resultant loss of appetite. Loss in weight is not great in the early stage of tuberculosis and may reach only four to eight pounds. Great loss in weight signifies advanced disease.

Night-sweats are due to toxemia and are variable, often being absent, and when present are accompanied by the other evidences of toxemia.

The study of the temperature curve is instructive. It should be carefully taken, and the high point for the day determined. This may vary in individuals, and the use of a graphic chart, with observations made at least four times a day, is the most satisfactory. As a rule, office temperatures are not reliable, and it must be remembered that temperature curves vary from day to day and week to week. The pulse may or may not be accelerated. While hoarseness usually occurs in advanced cases, slight hoarseness, existing temporarily for only a few days, may easily be

overlooked. Both are suggestive symptoms. The dry, hacking cough, due to tickling in the larynx, is reflex in origin, and is often treated, *per se*, without due consideration for its pulmonary origin.

While pains in the upper chest and in the shoulders are most frequent in advanced cases, these symptoms existing in early adult life should not be dismissed without a careful chest-examination to exclude tuberculosis.

The history of blood-spitting is always suspicious, and, when the pulmonary origin of blood is established, is one of the most significant of signs, when one considers that hemoptysis may occur as the initial and only symptom of pulmonary tuberculosis.

In examining the patients, it is superfluous to state that complete removal of the clothes above the waist is imperative; otherwise the examination is worthless. But there are large numbers of doctors who are satisfied with a cursory examination and do not strip their patients. This is particularly true in the case of female patients.

On inspection one often finds before him on the surface of the chest the complete picture of the pathologic process beneath. The atrophies, deformity, and diminished respiratory excursions of advanced disease are more readily discernible, but in the early lesions care must be exercised in determining the findings. Often slight lagging of the affected side is difficult to perceive. In cases of questionable nature the use of two pencil or ink dots symmetrically placed on either side anteriorly below the clavicle, and viewed from behind over the shoulders may set one right. Lines drawn along the lower costal borders anteriorly and following the ribs posteriorly may assist materially in bringing out localized diminished excursions. At times palpation may be used by placing the hands over the anterior chest from behind, to discover lagging when the eye fails to detect it, or to corroborate the findings of inspection. In fact, many cases of early pulmonary tuberculosis show symmetrical and apparently normally appearing chests.

Palpation may reveal lagging, as described, and increased tactile fremitus. In the very early lesions even this sign may be absent. One of the more valuable of early signs is the reflex spasm in the muscles of the neck, the sternocleidomastoid, upper fibers of the pectorals, trapezius, and the levator anguli scapulæ. The spasm is elicited by very gentle palpation.

Percussion over the affected area may only present a slightly higher pitched note with only slight impairment of resonance. In early cases the slightest deviation from the normal should be viewed with suspicion. In percussing the apices, the head should always remain in the same position facing directly forward, thus avoiding tension on muscles which changes the percussion note.

It has been a much-discussed question as to how early incipient lesions are discernible, and there is considerable divergence of opinions regarding the earliest sign of involvement. Very early the breath-sounds may be suppressed, but it is rare to see a patient in this period. But later, as the tissues become organized, the soft vesicular sound becomes harsher and bronchovesicular in character, and the expiratory murmur prolonged.

The presence of râles of the subcrepitant type is significant. In auscultating for râles one must be warned against the clicks and several atelectatic râles which appear after the first few breaths. These are without significance, but those persisting or augmented by coughing gently at the end of expiration are certainly significant of pathology. The presence of râles, bronchovesicular breathing, and increased pitch of the percussion note are pathognomonic findings, and, with a suspicious general history, warrant a diagnosis of tuberculosis. When bronchovesicular breathing with prolonged expiration and dullness are present without râles, an old inactive lesion is suspected. Râles usually mean activity.

Inasmuch as complications of pneumonia often simulate tuberculous lesions, these conditions must be differentiated. Unresolved pneumonias with abscess-formation and thickened pleuræ present perplexing problems in diagnosis. Heretofore most of the pneumonias were in the lower lobes, and the involvement of the upper lobes favored the opinion of tuberculosis. But in recent epidemics of influenza pulmonary complications were as frequent in the upper as in the lower lobes. Men who have been injured by gases in war-fare have new areas of weakened pulmonary tissue, which will favor the development of the tubercle away from its usual situation, the apex. Tuberculosis processes, however, differ in one characteristic in particular, which should serve to differentiate them. They extend by contiguity, and over the area affected will be found the different physical signs shading into each other. Superiorly one finds dullness, with bronchial breathing, and passing downward, the

dullness decreases and breathing becomes less harsh, bronchovesicular in character with râles, with normal lung below. In non-tuberculous lesions the physical signs are generally uniform over the area affected.

The most positive sign of tuberculosis is, of course, the presence of the tubercle bacillus, but, when not found, is valueless as a negative sign.

Too much importance is generally placed upon this feature of the examination. In fact too often a negative sputum is sufficient to dismiss a tuberculous suspect with assurances that tuberculosis is not the cause of his trouble. This is a prolific source of much of the mischief in the individual case, for the unfortunate progresses until massive involvement and destruction take place with tubercle bacilli in the sputum.

Very recently a case came under observation in which a generalized tuberculosis of three lobes was diagnosed following lobar pneumonia, which ran a characteristic course. Not until late in the disease and after twenty negative examinations were the bacilli found in the sputum. The reason for this was that the fibrinous exudate of the slowly resolving pneumonia plugged the bronchi and did not allow the early escape of the bronchial and alveolar contents. The fact that the bacilli are difficult to find even in advanced cases, emphasizes the necessity of care. In truth, in the average examination only a small part of the total expectoration is examined, and the marvel is that we find the bacilli as often as we do, and, when we do, indeed the sputum must be teeming with them.

Frequent and many examinations of the sputum should be made in the event of negative findings in any suspected case. The bacilli are difficult to find in viscid mucoid sputum, but should be readily demonstrable by three or four examinations in the purulent sputum that signifies destructive lesions, and the centrifuge should often be used in the investigation of the sputum.

The *x*-ray is not available to most physicians, but is a useful adjunct in the study of any given case, and should be used in connection with other methods of diagnosis. There has been a tendency to place too much dependence on this method of examination to the pathetic neglect of other and as useful methods. While organized tuberculous lesions are recognizable on the *x*-ray plate, the very early lesions do not cast shadows—indeed early and clinically marked miliary tuberculosis may show a negative photograph. Recently Baetjer, of Baltimore, made the statement that in a given case he could not dis-

tinguish between a metastasis of carcinoma and a tuberculous process. But in hilus lesions and in fluoroscopic observations of diaphragmatic movement, and in conjunction with other positive findings the *x*-ray offers gratifying corroborative evidence.

The diagnosis of tuberculosis is a matter of judgment based on the correlation of the findings, and manifestly there can be no arbitrary rules to decide the case. All signs are variable in their appearance, and any one or group may be absent. Often the diagnosis will be difficult after the most careful consideration. In such cases one is warranted to delay making a definite diagnosis, keeping the patient under careful observation and living under an antituberculosis regimen until convinced.

Once the diagnosis is made, the stage of the disease should be classified. For practical purposes the following classification is satisfactory; it is the one adopted by the National Association for the Study and Prevention of Tuberculosis and appears on the examination blanks of our state sanitarium:

"The first or favorable stage shows slight initial lesion in the form of infiltration limited to the apices of the lungs or a small part of one lobe; no tuberculous complications; slight or no constitutional symptoms (particularly including gastric or intestinal disturbances or rapid loss of weight); slight or no elevation of temperature or acceleration of pulse at any time during the twenty-four hours, especially after rest; expectoration usually small in amount or absent; tubercle bacilli may be present or absent.

"The moderately advanced stage shows no marked impairment of function, either local or constitutional; localized consolidation, moderate in extent with little or no evidence of destruction of tissue, or disseminated fibroid deposits; no serious complications.

"Far advanced stage shows marked impairment of function, local and constitutional; localized consolidation; intense, or disseminated areas of softening; or serious complications.

"Lastly acute miliary tuberculosis."

The involvement of mucous membrane at once places any case in the advanced group.

The lesion of pulmonary tuberculosis tends to become bilateral and, if the diseased area extends to the level of the third rib on one side, one is almost certain to find involvement of the opposite apex. There is usually greater involvement present than physical signs indicate, and it is safer to over-estimate than to under-estimate the pathology in a given case.

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THE INCOMPETENT NURSE

Incompetency is met with daily in every walk of life, and this fact comes pretty close to the doctor's official notice when he has to deal with the incompetent nurse. This statement does not mean that many nurses fall under this criticism, because there are innumerable women of high standing who are well trained and disciplined according to the latest hospital methods until they become nearly perfect in their work. As a result of their success, some other women who are not sufficiently endowed with the various faculties that form the machinery of success, attempt to follow in their footsteps, but, being either constitutionally, or mentally and nervously inferior, they are not able to assimilate the fundamentals of their training. Thus they become indifferent, discouraged perhaps, and sometimes dishonest. A few such women may come out of the training-schools, but the large proportion of incompetent nurses come out of the inferior classes and try to imitate a good thing without the necessary powers of appreciation.

In the olden times, and not many years ago, the nurse was an elderly woman who attended the neighboring families in confinement and through minor illnesses or even serious ones, and she was looked upon as a friend, a helper, and eventually as a nurse. She acquired something that was of value because she knew her place and did not attempt to do things beyond her limitations. But the woman of to-day who is untrained and who drifts into nursing or perhaps is

trained for a brief period and finally emerges from her cocoon as a *practical* nurse, is often a menace to the physician and to the patient. As a rule, these people are drifters, floaters, and they go from place to place, leaving a trail of trouble behind them. And as they go from bad to worse, they become lowered from every point of view. They are unreliable, unable to adapt themselves to conditions, and become tricky and mischievous. This ultimately leads to the vicious trait of gossiping, of appropriating things that do not belong to them, and of discussing their experiences broadcast.

A nurse who goes about from doctor to doctor or hospital to hospital and rattles about her experiences, and who criticizes the management and the way in which the patients are cared for, becomes a deceitful and dangerous person, largely for the reason that she refuses to place herself under the discipline of her superiors. If she did but know it, she would have a much better understanding of the nursing field if she unreservedly submitted to orders and carried them out faithfully and honestly. But this she cannot do because it is not in her to do it; and, as she wanders from place to place, she leaves the trail of an unwholesome odor behind her. She is then discovered to have been untrustworthy, undependable, and careless in her methods. When she is discharged, as she commonly is, she thinks that she is right, and the hospital and its management are all wrong.

The following instance, which occurred during the epidemic of influenza in 1919, will serve as an illustration of self-endorsed competency: A hospital was called up by a woman who inquired if they needed a nurse, and as there were many sick people at that time all hospitals needed all the nurses they could get. When she was told there was a position open, she immediately asked, "How much do you pay?" That was her first thought. When asked about her experience, where she was trained, and so on, she replied that she was not trained in any hospital, but that she had taken care of many influenza patients. Then she was asked, under the circumstances what she would consider in the way of remuneration and she promptly said she would consider forty-five dollars a week and her board and room. She was told to go on considering!

The foregoing is but an example of a conceited woman who probably knew nothing about nursing, and certainly nothing of the average training or discipline that a nurse undergoes. It is

these half-baked nurses, if they are criticized by their superiors, who make it a point to condemn the discipline and the hospital. Such nurses, of course, are not worthy of consideration at anyone's hands because they are trouble-makers, they breed disaster, and, if they did but know it, they are killing themselves off by disfavor. They criticize doctors and their treatment. They criticize hospitals and their conduct. They think they know more about the disease from which the patient suffers than does the physician or the head nurse. They go on blundering through their experiences and blundering through life until, finally, they make the fatal blunder, and then their career is ended.

All nurses should be classified according to their ability. This ability should be something which is appreciable to the physician and the patient. The better nurses, that is, the higher grade of nurses, should be recognized as registered nurses, and the examining board should determine who belongs in the "R. N." class. Nurses of moderate ability should have a title which classifies them as reasonably good, and this class should be rated by the nursing body.

Nurses who commit gross errors, who are dismissed from training-schools for misconduct or malpractice, and those who are dishonest and steal from patients and hospitals, should be black-listed in all hospitals and by all physicians. This same rule should apply to nurses who slander physicians and hospitals, or who advise patients or their relatives to change physicians, for this indicates a low type of mind and an unwillingness to abide by the orders of the physician and the hospital officers, and also indicates that they are themselves dissatisfied because they cannot take full command. All heads of hospitals recognize these problems, and, undoubtedly, wish they might be solved and the rules enforced through some legitimate channel.

The only remedy for such conditions is intensive training in a well-equipped hospital and under competent management. Then these nurses can go out as practical nurses, but they will have the fundamentals ground into them sufficiently so that they can do ordinary work in the ordinary family, and without charging an exorbitant fee. The time is coming when this problem must be squarely met, and the nurse must accommodate herself to the existing circumstances which surround the sick. The laboring classes need nurses, but even those of the higher order cannot pay from thirty to forty-five dollars a week for incompetent nurses. They can pay from twelve to fif-

teen dollars a week to someone who knows something about nursing. To the better class, or to the moneyed people, the cost of having the nurse is not exorbitant at present, but if the financial strain which we are approaching now comes to a more critical period, even those with money will refuse to pay the high salaries demanded by nurses.

Another vital question is, how are we going to differentiate between the well-trained nurse, a graduate of a high-grade hospital, and the other woman who imitates her and in the course of a few months gets the same pay and the same hours of work? This problem is up to the nursing government bodies, and if they do not meet it the doctors will have to do it for them.

COLORADO'S PSYCHOPATHIC HOSPITAL PROBLEM

In 1919 Colorado passed a bill in the legislature providing for a psychopathic hospital in or near Denver. The bill was drawn up after many conferences between men who were interested in the problem, and eventually became a law by the act of the legislature. They found, however, after it had been passed, that no provision had been made for funds for the purchase of a building site, and the erection thereon of a psychopathic hospital and laboratory, which were to be equipped to correspond to Chapter 169 of the Session laws of 1919.

This year, and, in fact, ever since the proposition was first considered by Colorado, some of the men have been very active in their propaganda work, and no one more energetically than Dr. George A. Moleen, of Denver. This work has been carried on before the conference of social workers, before the medical societies, and before other civic bodies. The campaign was well organized, and followed very closely the suggestions of the national committee on mental hygiene. It was impressed upon the people that the great object of the State and of individuals should be the prevention of insanity. Attention was called to the present limitations of Colorado, and this applies equally well to the state of Minnesota. There is an inadequacy of space for the care and cure of the insane as well as an absence of scientific laboratories, and there is, very naturally, insufficient medical aid except in the state hospitals, which are custodial institutions in which a staff has charge of the sick in the hospital.

Dr. Moleen has called attention to the three

urgent demands which the psychopathic hospital is supposed to relieve. First, the prevention of mental diseases. Second, prompt care and treatment of incipient cases. Third, improvement in the state hospitals to provide investigation and treatment of the more protracted conditions. Dr. Moleen defines a psychopathic hospital as one which is devoted to the care and treatment of incipient, acute, or recent mental disorders, and exists for the principal purpose of giving to these patients the best possible treatment as early as is practicable, with a view of returning as many of them as possible to their families or friends. Much emphasis is laid on the need of a laboratory (which should be complete) for modern methods of investigation to facilitate diagnosis and further treatment, and it should be under the care of a whole-time man, just as the psychopathic hospital should be under the care of a trained hospital man who is familiar with psychiatry.

TO BE INSANE IS TO BE SICK

HOSPITALS ARE FOR SICK PEOPLE

There is no Hospital for the study and treatment of curable insane in Colorado

The Remedy:

Appropriating Funds for a State Hospital and Laboratory for the Curable Insane	YES	X
	NO	

ONE-FIFTH OF A MILL TAXATION WILL PROVIDE IT!

REMEMBER THE UNFORTUNATES

YOU MAY ALSO SOME DAY BE UNFORTUNATE

It is clearly a State's duty to help the insane who cannot speak for themselves

Be Sure to Vote Your Ballot as Follows:

Appropriating Funds for a State Hospital and Laboratory for the Curable Insane	YES	X
	NO	

ONE-FIFTH OF A MILL TAXATION WILL PROVIDE IT!

This year the Denver men who are interested in the psychopathic hospital sent broadcast through the state, to all the physicians and others who are in authority, copies of an amendment which was to correct an error made in the original bill of 1919. The petition was signed by such a large number of men that it ran away from the number of petitioners necessary to bring up the amendment. After the returns from the physicians of the state had come in the committee having the matter of the petition in charge, composed of Dr. David Strickler, Dr. George A. Moleen, and the Hon. Ira C. Rothgerber, carried the propaganda still further, and they sent cards (which are reproduced here in

small type), to as many people as could be reached, for the appropriation of funds for a state psychopathic hospital.

They asked but one-fifth of a mill taxation, and the editor has just received a telegram from Dr. Moleen stating that the psychopathic hospital amendment carried by a large majority. So Colorado is assured of this hospital, and of sufficient funds to erect and maintain it. It should be noticed here, that these funds provide for a laboratory as well as a hospital, for this is considered equally as necessary as the hospital. These cards, as you will see, call your attention to the fact that the "curable insane" are to be cared for; that these people are more or less unfortunate, and that simply because they are insane there must be an illness of some kind behind it.

Undoubtedly this measure will be taken up by the Minnesota State Board of Control and the hospital superintendents, and it is to be hoped that every one interested in the erection of a psychopathic hospital and the funds to maintain it, will do everything he can between now and the time of the meeting of the legislature to further it.

ARE YOU ANXIOUS TO BE RE-JUVENATED?

This is not a political problem; but it is strictly a medical problem, and we believe it is not a serious one, in spite of the fact that when the "articles of corporation" that will rejuvenate the worn and aged are advertised so thoroughly in the daily press it makes one sit up and wonder whether there is anything in these foolish stories or not.

Not many weeks ago a man rushed over from Paris to do gland work. "Keeping old men at vigorous middle age," was his "Christian endeavor," and he got the usual space in the press for nothing. How much he made out of the trip has not been told. Perhaps he has segregated himself in the laboratories of research and is still working on animals. Let us hope so. Otherwise, if he has decided to make the most of his opportunities, the sheep and goats and other endowed animals that give up their parts for the rejuvenation of the aged, will be reduced in numbers almost as rapidly as at the packing houses.

It is asserted that operations which are supposed to make the old young again are for the purpose of re-establishing and maintaining general physical and mental vigor; and the assertion

is also made that this form of transplantation will prevent arterial sclerosis and senile decay. Hitherto we had thought it a part of the game of life to live, to work, and to die, taking what was presented to us as a means to an end and also convincing ourselves, eventually, that overwork and over-strain, as well as over self-indulgence, were not a curable trouble, particularly when one considered that a large number of people under forty die of old-age diseases.

After this comes the stirring announcement that in Vienna the secrets of life, the lengthening of years, and the control of youth are the battle-cry of the day; and, although the newspaper does not go into details, it suggests, through the interview of a man recently returned from Vienna, that wonders are to be accomplished by a slight surgical operation, done under local anaesthesia. Think of it, ye gods and men; what wonders are in store for us! This is a process simpler, even, than the transplantation method above mentioned. It does not mean the grafting of glands, but evidently means that some gland which is not functioning properly is removed, and the other gland is expected to do double duty. This is the latest theory of rejuvenation, and does not include the injection of thyroid derivatives, such as outlined by the actress who claimed she was fully restored and able to prance about in true stage fashion, after an injection of this type had been given her. Can this theory be true, as is claimed by the one interviewed, when he said, "with something which has outgrown its usefulness removed, it is reasonable to suppose that something else may assume neglected duties and perform them efficiently." Tommyrot! And yet multitudes of men will discuss the subject, not in the bosom of their families, but at clubs and at gatherings of men; they will think about it, plan over it, and wish they had their chance.

The human body is referred to, in this last "domestic" problem, as resembling a motor car; after using a motor car for one year it must be overhauled. Apply this to a human being, if you will, and see if this same human being will not snort at the idea. And, then, to have him understand that repair is possible is almost electrifying. It may eventually lead, if he is properly rejuvenated, to electrocution. No wonder the marvel who brings this information back to this country, speaks of rejuvenation with "detached caution." He has in these two words at least "saved his

face," and perhaps saved many men from having their anatomies damaged.

All this, of course, is nothing but suggestive advertising, and the effort of a man who believes in a theory to promote this "rejuvenation" on insufficient grounds and to deceive the people by suggestive promises that are never to be realized.

A little more investigation of social hygiene, a little study of mental hygiene, and a little study of the proper care of one's body will do away with the rejuvenation theory. Most men are as old as they think they are, and it is the fear of old age that leads them on to these wild experiments. Years apparently do not count. It is the growth and development and the joy of living that make us keep young. If we think right and act right the renewal of life will be ever present. When a man who has passed middle life can enjoy himself in simple, normal ways, he is on the road to long life. If every man did this sort of thing without worrying about his anatomy, he would stay young as long as is necessary.

THE CHRISTMAS SEAL SALE

The Minnesota Public Health Association, a voluntary organization working largely through county societies, is dependent for support wholly upon the sale of penny Christmas Seals or stamps which are put by their purchasers upon packages and letters sent through the mails, thus carrying a message of good-will to both friends and strangers, giving notice that public interests are not forgotten by those who send these silent messengers.

In 1919 the sale of Seals in Minnesota amounted to the enormous total of nearly fifteen million, which was a larger per capita sale than reached by the other ten states in the Upper Mississippi Valley.

The plans of the Association call for a much larger expenditure this year, and the sale should be much larger. As this work is carried on largely through medical men, the whole profession should encourage the sale of seals. Dr. C. L. Scofield, of Benson, is president, and Dr. A. J. Chesley, of the State Board of Health, is vice-president of the Association. As Dr. Scofield is also a member of the State Board of Health it will be seen that the two bodies are working in perfect harmony, and this is fortunate, indeed, and it means greatly increased efficiency on the part of the voluntary association.

NEWS ITEMS

Dr. C. W. Paulson has moved from Hartland to North Branch.

Dr. T. G. Clement has moved from Minneapolis to Aurora, Ill.

Dr. W. R. Owen has moved from Manfred, N. D., to Oakes, N. D.

Dr. A. A. Nichols has resigned his position of City Health Officer of Fargo, N. D.

The Commercial Club, of Edgeley, N. D., are planning to build a hospital in that city.

Dr. Earl Crafts, of Minneapolis, has become associated with Dr. A. N. Rowe, of Estelline, S. D.

Dr. F. F. Slyfield, of Duluth, will spend the winter in New York City at the eye, ear, nose, and throat clinics.

Dr. James M. Hayes, of Rochester, was married last month to Miss Catherine Nightingale, of Minneapolis.

Dr. S. E. Schwartz, of Butte, Mont., was married last month to Miss Ethel Claire Gensberger, of the same city.

Dr. F. L. Durgan, of Winnebago, has been appointed resident physician of the Nopeming Sanatorium, near Duluth.

Dr. William B. Wright, who has been associated with Dr. Justus Mathews, of Minneapolis, for some time, has moved to California.

The November meeting of the Minnesota Academy of Ophthalmology and Oto-laryngology was held in Rochester, November 15.

Dr. Henry F. Kammann has moved from Taylor, N. D., to Pasco, Wash., and has entered into partnership with Dr. E. C. Hamley, of that place.

Dr. H. W. Orr, of Lincoln, Neb., will deliver a Mayo Foundation Lecture in Rochester, Thursday, December 2, on "The Treatment of Spinal Injuries."

At the Centennial Celebration of the University of Cincinnati, the honorary degree of Doctor of Science was conferred on Dr. Edward C. Rosenow, of Rochester.

Dr. William H. Empie, school physician at Virginia (Minn.) reported last month that there was but one case of contagious disease in the schools of that city.

Dr. F. E. Best, who was recently mustered out of army service, will resume practice in

Wells, and will be associated with Drs. Holm & Anderson, of that city.

Dr. Charles W. Drew, for many years director of the Minneapolis Institute of Pharmacy, and formerly city physician of Minneapolis, died last week at the age of 62.

Dr. C. H. Cherry, a member of the staff of the Rood Hospital of Chisholm, has moved to Minneapolis and become associated with Dr. Justus Mathews, of Minneapolis.

Dr. Helen Hughes Heilscher, of Mankato, was elected chairman of the American Legion Women's Auxiliary of Minnesota, at its annual meeting in Minneapolis last month.

Dr. A. P. Andrus is the new executive officer of the Ashland (Wis.) General Hospital, over which Dr. J. M. Dodd has presided for many years. Dr. Dodd resigned last month.

Dr. John G. Bowman, of Iowa, who is well known in the Northwest as director of the American College of Surgeons, has been elected chancellor of the University of Pittsburgh, Pa.

The Western Surgical Association holds its annual 1920 meeting in Los Angeles this week (Dec. 3 and 4). A number of surgeons go to the meeting from the Twin Cities and other points in this territory.

Dr. C. M. Jackson, Professor of Anatomy, University of Minnesota, will deliver one of a series of Mayo Foundation Lectures on the History of Medicine, December 16. Dr. Jackson's topic is, "History of Anatomy."

The Minneapolis League of Catholic Women passed a resolution approving the reappointment of Dr. Mabel Ulrich, of Minneapolis, as a member of the Board of Public Welfare. This is a high compliment to Dr. Ulrich.

It is rumored that one of the leading hospitals in Minneapolis will be leased to the United States Public Health Service to meet a pressing demand from the wounded and otherwise disabled soldiers needing medical attention.

Dr. Frederick R. Baldwin, of the Glen Lake Sanatorium, near Minneapolis, died last month at the age of 60. Dr. Baldwin was a graduate of Ann Arbor, and at the time of his death was resident physician of the Sanatorium.

The St. Louis (Mo.) University, the oldest seat of learning west of the Mississippi River, is asking its alumni for an endowment fund of \$3,000,000, to be used mainly for the support of the Colleges of Medicine and Dentistry.

Dr. W. M. Sweney, of Red Wing, has lived in Red Wing for 69 years and practiced medicine there for 44 years, succeeding his father in practice. He graduated from Bellevue in 1876. Dr. Sweney celebrated his 71st birthday last month.

Dr. Guy Brelsford, who was connected with the State Sanatorium at Walker, before entering the war, has entered upon his work as medical director of the Sunnyrest Sanatorium at Crookston, which now has a capacity of forty-four beds.

Dr. E. G. Hutterer, of Sanborn, Iowa, has moved to Cold Spring, Minn., and has taken over the practice of Dr. T. N. Femming, who goes to New York for postgraduate work in eye, ear, nose, and throat work, after which time he will locate in St. Cloud.

The medical library of the late Samuel H. Irwin, of Grand Forks, N. D., has been presented by Dr. Irwin's family to the Medical Department of the University of North Dakota. The library contains many valuable volumes of both books and medical periodicals.

At a meeting of the Hennepin County Medical Society last week to consider the erection of a building for physicians and dentists, it was definitely decided to proceed with the project. About \$25,000 was subscribed at the meeting, and a lot at Mary Place near 12th will be purchased.

Dr. Norman M. Keith, former Clinician in Medicine in the Faculty of Medicine of the University of Toronto, has gone to Rochester, Minn. to be associated with Dr. Rowntree and Dr. Fitz in the further development of research in internal medicine and in the hospital care of patients with medical conditions.

Dr. C. Francis Crain, who practiced medicine at Tulare, S. D., during the summer, has returned to Philadelphia, where he enters for a two years' internship in the Episcopal Hospital. Dr. Crain graduated from Jefferson Medical College last June. Dr. C. Francis Crain is a son of Dr. F. M. Crain, of Redfield, S. D.

At the annual meeting of the Southwestern Medical Society, held last month at Pipestone, the following officers were elected for 1921: President, Dr. F. G. Watson, Worthington; vice-president, Dr. F. M. Metcalf, Fulda; secretary and treasurer, Dr. E. G. McKeowan, Pipestone. The May meeting will be held in Fulda.

At the last monthly meeting of the Grand Forks (N. D.) Medical Society, Dr. H. M. Wheeler, formerly of Minnesota, read a paper on

the "Early Life of a Surgeon in the Northwest," the third of a series of historical papers on medical subjects. The other two papers were read by Dr. F. J. Duggan and Dr. J. A. Engstad.

Dr. W. E. Morse, of Minneapolis, has resigned from the Navy and has formed a partnership with Dr. F. W. Minty, of Rapid City, S. D. Dr. Morse is a graduate of Northwestern, and has done postgraduate work in the Navy School at Washington and in the Rockefeller Institute in New York City. He was over three years in the Navy and spent several months abroad.

The Government has purchased the Aberdeen hotel of St. Paul for hospital purposes for the men of the Tenth District, which includes Minnesota, North and South Dakota, and Montana. It will be opened as a Government hospital next month. It will have three hundred beds. Dr. L. A. Walker is the acting chief of the United States Public Health Service for the Tenth District.

The county health officers of Minnesota met in annual session in St. Paul last month with the State Board of Health. Special open meetings were held, and the Red Cross nurses, sanitary engineers, all physicians, and all people interested in health promotion, were invited to attend. All meetings were enthusiastic and well attended. The potential power of such a gathering is inestimable. Every possible public topic was discussed and valuable suggestions given.

At a meeting of the Rochester local post of the American Legion, held in Rochester last month, Dr. W. F. Bleifus, the local health physician, called for an expression of opinion upon the subject of a semi-annual examination of former service men in order to keep them physically fit, the examination to be free. The response was unanimous in favor of the plan, which recommends itself for general adoption in the Legion. And physicians outside the Legion will, it was promised, do the work free.

Late in October a meeting of the general staff of the Mayo Clinic was held in honor of Sir Berkeley Moynihan and Sir William Taylor, who returned to the Clinic from the meeting of the American College of Surgeons with Dr. W. J. Mayo. Sir William Taylor, ex-President of the Royal College of Surgeons of Ireland, gave a short talk on the history of that organization, which was established in 1774 by Royal Charter. Sir Berkeley Moynihan outlined the John B. Murphy Oration on Surgery, delivered by him

at the meeting of the American College of Surgeons.

At the annual meeting of the Minnesota Public Health Association, a purely voluntary organization, held last month in St. Paul, the following officers were elected: President, Dr. C. L. Scofield, Benson; first vice-president, Mrs. H. A. Patterson, Mankato; second vice-president, Dr. A. J. Chesley, Minneapolis; secretary, Mrs. A. H. Vernon, Little Falls. An executive secretary has not yet been appointed. The Association is making strenuous efforts to make the annual Christmas Seal sale very large in order to enable the Association to carry out its large plan of health work in every county in the state.

The second course in Public Health Nursing will begin at the University of Minnesota Medical School on January 4, 1921, and will continue four months. New students may be admitted at this time or those who have taken the first four months' training may continue their studies through the second period. A four years' high school course is a prerequisite for admission. Applicants may be graduates of recognized schools of nursing or senior students in such schools who are recommended by the superintendent in charge. Applications for entrance should be made, as soon as possible, to Miss Louise M. Powell, Superintendent, School of Nursing, University of Minnesota, Minneapolis.

The Minnesota State Board of Health, in co-operation with the city health department of Virginia, has opened a free clinic for venereal disease. This clinic is held in the Virginia City Hospital and is open on Monday evening for men at 8 P. M. and on Thursday evening for women at the same hour. The physicians in charge at this clinic are Dr. W. M. Empie and Dr. H. T. Ground. All physicians on the Range may send to this clinic persons applying for treatment for venereal disease, who are not able to pay a physician's fee. This makes the fifth of the group of free clinics established by the State Board of Health jointly with local agencies. The others are located in Minneapolis, St. Paul, and Duluth.

Dr. Stokes, of the Mayo Clinic, is attending the joint meeting of the Chicago Dermatological and St. Louis Dermatological Societies in St. Louis. He will read a paper, "The Problem of Syphilis in General Diagnosis," before the Southwestern Medical Society in Wichita, Kansas. From Kansas he will leave for New York City and will spend two days in studying the Bertillon

system of anthropometric measurement to be applied in a study of heredosyphilis. Dr. Stokes then goes to Washington, D. C., to deliver a series of seven lectures before the Institute of Venereal Disease Control and Social Hygiene, which is being held by the United States Public Health Service during the first week in December. This institute is a ten-day free course for all physicians, chiefs of clinics, and others interested in the management of syphilis and gonorrhoea. The medical faculty includes Dr. Fordyce and Dr. Keys of New York City, Dr. Hugh Young of Baltimore, Dr. Irvine of Minneapolis and other specialists. Following the Institute, a conference on the social aspect of venereal disease will be held in Washington which will include representatives from Europe and South American countries; at this time an effort will be made to formulate a policy with reference to venereal disease and social hygiene.

NORTHWESTERN SURGEONS ADMITTED TO FELLOWSHIP IN THE AMERICAN COLLEGE OF SURGERY IN 1920

MINNESOTA

Dr. Albert E. Booth.....	Minneapolis
Dr. Paul F. Brown.....	Minneapolis
Dr. John L. Butsch.....	Rochester
Dr. Chester M. Carlaw.....	Minneapolis
Dr. William C. Carroll.....	St. Paul
Dr. Theodore L. Chapman.....	Duluth
Dr. Carl C. Chatterton.....	St. Paul
Dr. Howard S. Clark.....	Minneapolis
Dr. Charles D. Conkey.....	Duluth
Dr. John A. Evert.....	Brainerd
Dr. Eugene K. Green.....	Minneapolis
Dr. Stuart W. Harrington.....	Rochester
Dr. Halvor Holte.....	Crookston
Dr. Elmer M. Jones.....	St. Paul
Dr. Carl L. Larsen.....	St. Paul
Dr. Veader Newton Leonard.....	Duluth
Dr. Ambrose L. Lockwood.....	Rochester
Dr. Clarence E. Lum.....	Duluth
Dr. Clarence O. Maland.....	Minneapolis
Dr. Franck E. McEvoy.....	Rochester
Dr. Frederick A. Olson.....	Minneapolis
Dr. O. W. Parker.....	Ely
Dr. Samuel C. Schmitt.....	Minneapolis
Dr. Fred C. Schuldt.....	St. Paul
Dr. Frederic J. Souba.....	Minneapolis
Dr. John C. Staley.....	St. Paul

MONTANA

Dr. Robert D. Alton.....Livingston
 Dr. Frank C. Davis.....Lewistown
 Dr. John H. Garberson.....Miles City
 Dr. Hugh E. Houston.....Kalispell
 Dr. Byron L. Pampel.....Livingston
 Dr. James I. Wernham.....Billings
 Dr. Alfred J. Willits.....Anaconda

NORTH DAKOTA

Dr. Frederick H. Bailey..... Fargo
 Dr. Paul Haney Burton..... Fargo
 Dr. Cyrus N. Callander..... Fargo
 Dr. George A. Carpenter..... Fargo
 Dr. George A. Carpenter..... Bottineau
 Dr. William A. Gerrish..... Jamestown
 Dr. Henry W. F. Law..... Grand Forks
 Dr. A. W. Macdonald..... Valley City
 Dr. Bernard S. Nickerson..... Mandan
 Dr. Edgar A. Pray..... Valley City
 Dr. John H. Rindlaub..... Fargo
 Dr. William F. Sihler..... Devils Lake
 Dr. Victor H. Stickney..... Dickinson
 Dr. Joseph Calvert Suter..... Grafton
 Dr. Nils L. Tronnes..... Fargo
 Dr. Ralph E. Weible..... Fargo
 Dr. George M. Williamson..... Grand Forks
 Dr. Henry G. Woutat..... Grand Forks

SOUTH DAKOTA

Dr. Joseph Mark Walsh..... Rapid City

OFFICE POSITION WANTED

A young woman of good address who will give faithful service, wants a permanent position in a physician's or dentist's office at a moderate salary. Can keep books and can use the typewriter fairly well. Address 417, care of this office.

POSITION WANTED BY X-RAY TECHNICIAN AND NURSE

A registered nurse and X-ray technician desires a position on January 1st. Has had three years' experience in a surgeon's office. Address 419, care of this office.

FOR SALE

One nearly new Spencer microscope No. 25 H., in perfect condition. List price \$132.00; first check for \$95.00 takes it and mahogany case.

One specialist's chair, upholstered in leather, (made by American Metal Furniture Co., Indianapolis, Ind. No. 513.). Still in original crate; never used. List price, \$110.00; first check for \$85.00 takes it F. O. B.

One stool to go with specialist's chair. List price, \$14.00, by same manufacturers. Price, \$10.00. Never used and in original container. F. O. B.

Address 418, care of this office.

WAGNER MICA PLATE STATIC MACHINE
FOR SALE

I used this machine in small country village for x-ray where there was no electric current. It is also fine for electric treatments where there are no other currents. Will pay for itself in one year if used. Have no use for it now that I have moved to city. Will sell dirt cheap. Address 416, care of this office.

PRACTICE FOR SALE

Cash income last two years averaged over \$5,000 a year. Railroad contract transferable. Division point on C. M. & St. P. R. R. Price, \$2,500 for equity in real estate. Write G. J. Warnshuis, M. D., Marmarth, N. D.

HOSPITAL FURNITURE FOR SALE

Kny Schoerr operating-table No. 3; National Sterilizer, hospital size; Wheel stretcher; Heidbrink Gas Apparatus, three large tanks and cart; Complete laundry equipment; All Equipments for a 40-bed hospital. All of above are in excellent condition. For sale at a bargain, if taken at once. Address 415, care of this office.

OFFICE AND HOSPITAL SUPPLIES FOR SALE

A 10-K.W. Snook X-Ray Transformer with table and dark-room outfit; 3 McDonald chairs, lung-motor, microscope, operating-room outfit, scales, and all kinds of office supplies and furniture, at a sacrifice for quick sale. Address 410, care of this office.

LABORATORY TECHNICIAN WANTS POSITION

A young woman desires a position in a doctor's office or hospital, 3 or 4 hours a day, in Minneapolis or St. Paul. Thoroughly experienced in Wassermann, Blood Chemistry, and routine laboratory work. Address 411, care of this office.

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It is the custom of THE JOURNAL-LANCET to direct, in this department and from time to time, the attention of our readers to special features of the things or institutions mentioned by our advertisers in their respective lines, and to do so without exaggeration.

We always refer with pleasure to the work going on in the Asbury Hospital of Minneapolis, for it is a large and a great institution, with a staff of able men; with a hospital personnel of exceptional merit and directed by a woman of high character and very marked ability, a philanthropist—greatly beloved in the church shaping the destinies of Asbury; and with an equipment in the line of apparatus and appliances quite unexcelled.

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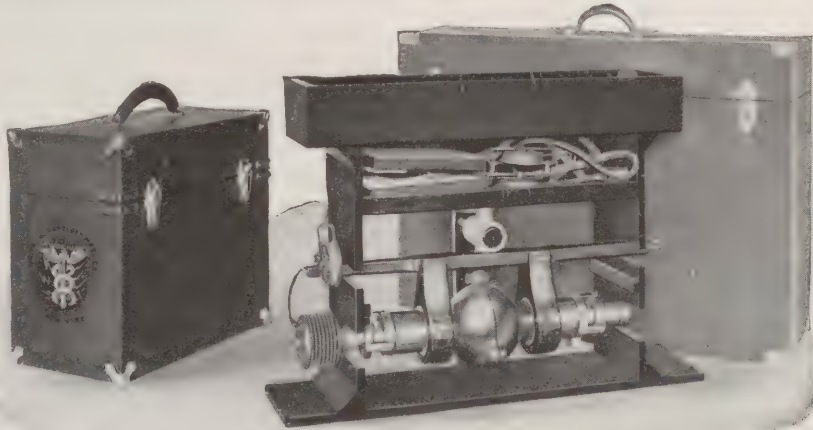
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PUBLISHER'S DEPARTMENT

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The Painter Company handles a full line of *x*-ray equipment and supplies, and Mr. Painter knows how to serve and satisfy customers.

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In our advertising section, under the title "Adrenalin in Medicine," will be found a brief review of the plan of treating shock with highly diluted solutions of Adrenalin Chloride, by intravenous infusion and by "centripetal arterial transfusion," after the method of Crile.

This little essay is the third of a series of concise and informative papers published in this rather unconventional form by Parke, Davis & Co. We have no hesitation in commending these meritorious articles to the consideration of our readers.

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The Abbott Laboratories supply Benzyl Benzoate in two forms, tablet and elixir, both of which are truly representative of the drug.

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The Encyclopedia Britannica says that "for lowness of humidity and clarity of atmosphere Southern Arizona rivals Egypt," and it is in this climate that two eminent physicians, Drs. Jeremiah Metzger and E. W. Hayes, are conducting a sanatorium for tuberculous patients. This sanatorium is splendidly equipped in every way, and not a few Minnesota people have been patients in it to their entire satisfaction.

Not only the early case, but the somewhat advanced case finds relief under such an environment and such scientific treatment as these eminent experts can give with their modern, scientific methods.

The institution is worthy of high commendation to Northwestern people.

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Puffed Wheat

Puffed Rice

Corn Puffs

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The Chicago Laboratory is located at 25 E. Washington St., Chicago.

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BENZYLETS *lower high blood pressure*

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THE JOURNAL-LANCET

Represents the Medical Profession of
Minnesota, North Dakota, South Dakota, and Montana

The Official Journal of the
North Dakota and South Dakota State Medical Associations

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No. 24

OLD FRACTURES*

BY M. S. HENDERSON, M.D.

Section on Orthopedic Surgery, Mayo Clinic
ROCHESTER, MINNESOTA

The exact time at which a fresh fracture becomes an old fracture cannot be stated. Old fractures may be defined as those that, for some reason, are troublesome after the ordinarily allotted time for the return of function. A patient may present himself with an old fracture for any one of many reasons, for example, malunion, delayed union, non-union, limitation of joint motion, ischemic paralysis, a local manifestation of a general condition, such as carcinomatosis, tabes dorsalis, the various forms of osteomalacia, or a complication of a local bone condition, such as sarcoma or fibrocystic disease. The subject is broad and the problem one that sooner or later confronts every practitioner. As an orthopedic consultant, I have seen a large number of these fractures. To enter into the details of a study of these cases at this meeting would probably be wearisome, therefore I shall mention only the outstanding points. I should like to say that the vast majority of fractures treated by the profession as a whole are well treated, and the results are all that could be desired. The results in the very small number in the group under discussion for some reason are unsatisfactory. In a cursory manner I shall speak of the causes of the bad results, limiting my discussion more particularly to the effects of the fracture and the general principles that should guide us in the treatment of these effects.

MALUNION

A certain degree of malunion is by no means incompatible with good function. This fact is too frequently lost sight of when the röntgenogram is being interpreted, and intervention is advised without taking into consideration the patient's actual amount of disability. The percentage of loss of function in cases of malunion in most instances depends on the degree to which alignment is disturbed. It is needless to emphasize that this is of much greater importance in the lower extremity than in the upper, for in the latter the problem of sustaining the body-weight does not exist. The nearer the malunion is to a joint, as a rule, the greater the disability. If a certain amount of malunion must be accepted, as in many Colles' fractures, which are in reality compression fractures, as recently emphasized by Stevens, with actual destruction of cortical bone, we should immediately cease to worry over the distressing anatomic distortion as shown by the x-ray, and direct our efforts toward restoration of function. In a Colles' fracture of this type we might, by a long, tedious operation with subsequent painstaking post-operative care, attain a better anatomic result, but the function would not be one whit better nor perhaps so good, due to adhesions of tendons following the necessary operative trauma and so forth, as could be attained by conservative measures. In passing it might be well to mention that many poor results following Colles' fractures are due to prolonged

*Presented before the Medical Association of Montana, Helena, July 14 and 15, 1920.

splinting. As soon as the pain, swelling, and tenderness have abated the splints may be removed daily, and careful active motion of the wrist encouraged. The splints should never extend beyond the metacarpal heads, and their use should be discontinued as soon as possible. In reality a Colles' fracture is thoroughly impacted. In cases in which the position can be improved by manipulation there is no tendency for return of the deformity, and splints are necessary only to keep the part at rest until the soreness leaves. Certain fractures of the surgical neck of the humerus, particularly in patients advanced in years, leave in their wake some malunion. This is of little importance if the arm is abducted and externally rotated during the early healing proc-

ward displacement of the upper causes the weight to be transmitted through the articulating surfaces of the condyles of the femur too far posteriorly, thus causing a disability which, as a rule, demands surgical interference. (Figs. 1 to 4.)

The shortening in itself is of minor importance, but often the patient is obsessed with the idea of attaining full length of the limb. The surgeon must be on his guard not to be precipitated into a serious operation when a little elevation of the heel inside and outside the shoe will do away with the limp. A Pott's fracture of the ankle may heal with the foot in valgus producing marked pain. The astragalus must be replaced to near its normal position, and this means that

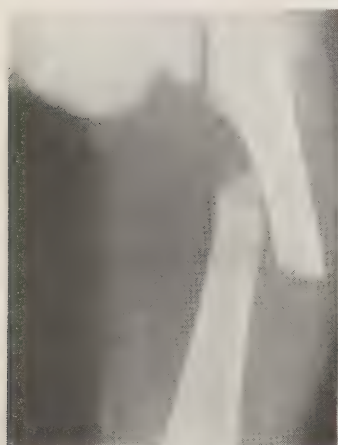


Fig. 1

Fig. 1 (307168)

Delayed malunion of fracture of the upper third of the femur. Open operation. Beef-bone plate with six beef-bone screws.

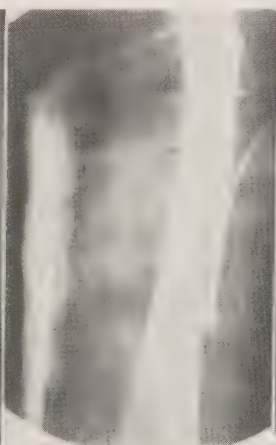


Fig. 2

Fig. 2 (307168)

Described in legend for Figure 1.



Fig. 3

Fig. 3 (248582)

Malunion of the lower third of the femur of six months' duration. Open operation. Application of two metal plates which were later removed.

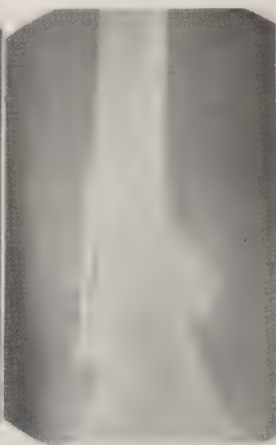


Fig. 4

Fig. 4 (248582)

Described in legend for Figure 3.

ess. Specific instances of malunion, such as these, are cited to show that we may expect malunion in certain fractures and that if they are handled properly it is of no importance. We must bear in mind that an anatomic malunion is not necessarily a functional malunion. On the other hand, the symptoms from a malunion may be most distressing. A fracture in the middle third of the femur that has healed in bad alignment with anterior and outward bowing, produces disability with a limp due to the shortening and the static arthritis that result because the weight is improperly transmitted through the joint surfaces. The well-known fracture just above the condyles of the femur with the posterior displacement of the lower fragment and for-

ward displacement of the upper causes the weight to be transmitted through the articulating surfaces of the condyles of the femur too far posteriorly, thus causing a disability which, as a rule, demands surgical interference. The posterior displacement of the astragalus sometimes seen is a very troublesome complication. It may be caused by a crushing of the astragalus, but is more often due to crushing of the posterior portion of the articulating surface of the tibia, which allows the astragalus to slip backward. If this destruction is at all extensive, it is often impossible to effect any correction of the deformity in the old cases, and an astragalectomy or an arthrodesis of the ankle is the only resort.

Also not infrequently the external portion of the articular surface of the astragalus is crushed, and the bone, acting as a wedge, causes a longitudinal fracture of the tibia, thus producing a

widening of the internal-external diameter of the ankle. It is interesting to note how the strong tibia-fibula ligament in this region resists the force, and the tibia is fractured first. It is surprising, however, that a person with what in the röntgenogram appears to be an exceedingly poor result in a Pott's fracture may walk with very little inconvenience and be without complaint. This can be explained only by the fact that by some stroke of luck a good articulating surface with the line of weight-bearing evened up has been formed.

In the whole field of operative surgery there is no branch that demands the application of simple mechanics more than the treatment of malunited fractures. No hard and fast rules as to methods can be laid down. The chief aim is

sand bags or a Buck's extension after applying a metal plate or a bone graft is a practice that should not be countenanced. The benefit of a beautifully performed operation may be lost, the surgeon discredited, and the patient bitterly disappointed unless external support in the form of plaster-of-Paris or a proper splint is employed. When non-absorbable material is used it is a good plan—and one that I am following more closely as time goes on—to tell the patient that such material should, in all probability, be removed as soon as it has served its purpose in holding the fragments in position until union has occurred. This will prevent future difficulties of many kinds. Because such appliances may give rise to trouble and have to be removed following their use, does not mean that they should be relegated to the surgical scrap-heap. Properly

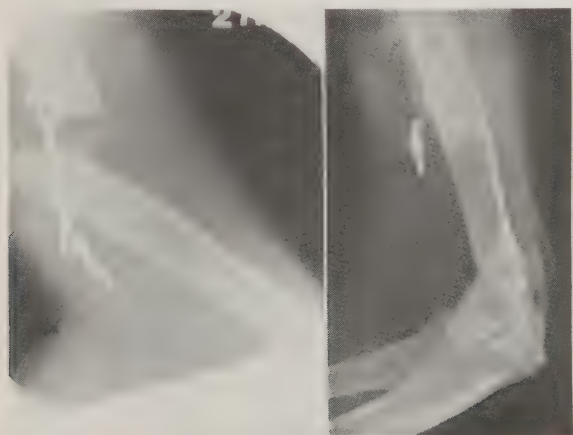


Fig. 5 (277690)

Ununited fracture of the left humerus in a man aged 70. Failure of metal plate shown.

Fig. 6 (277690)

Union brought about by bone-graft held in place by the aid of beef bone screws. Note two screws left in tissue as they could not readily be located and removed.

to restore the normal line of weight-bearing or the direction of force. When this has been attained the fragments must be held in position. This may be done satisfactorily by external appliances, such as a plaster-of-Paris cast or splints, such as the Thomas splint for the lower extremity, but only too often it is necessary to use internal fixation by metal plates, silver wire, nails, and so forth. Such materials should be used only when absolutely necessary, and absorbable materials used whenever possible. The external and internal splinting go together. Poor results after operations of this nature are seen because too much reliance is placed on the internal splint. Putting patients to bed with only

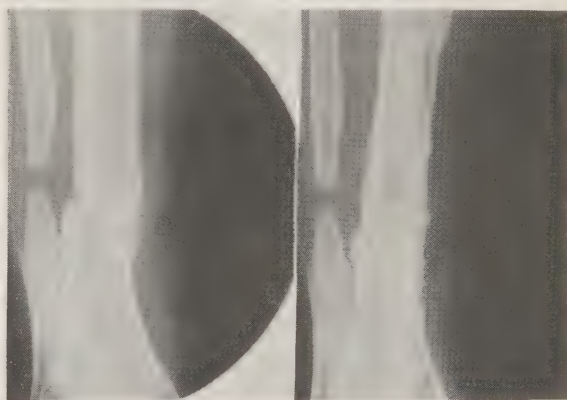


Fig. 7 (278532)

Ununited fracture of two years' duration of the right tibia and fibula. Ununited fracture shown.

Fig. 8 (278532)

Union brought about by the aid of a bone graft obtained from the opposite tibia and held in place by beef-bone screws.

used and applied they are valuable aids in the treatment of malunion. After a long and tedious procedure of freeing, for example, the fragments of a malunited femur, lining them up, and preparing the ends for coaptation, if the patient is showing the effects of the operation it may be best if the surgeon relinquishes the idea of placing a bone graft, and applies a metal plate and sends the patient to bed in good condition. I do not mean to infer that the bone graft is not to be used in malunion. The question is not one of obtaining union, but of correcting deformity, and restoring as nearly as possible the normal line, and consequently the stimulating bone-forming action of the graft is not necessary. If the fragments are held in apposition union will occur,

and the plate is used merely to hold position. Beef-bone plates and screws are useful in such conditions and have the advantage of being absorbed.

DELAYED UNION

A fracture that has not as yet united, but in which there is evidence of continued repair, is probably more fittingly termed a delayed union than non-union. Some fractures may be delayed in uniting for as long as a year or more. Other fractures may definitely be classified as belonging to the non-union group at the end of three months. In delayed union there is callus-formation, motion is difficult to elicit, and the fracture on manipulation imparts the feel of semisolidity. In some fractures of the femur, tibia, radius, or ulna with delayed union it may be well-nigh impossible to detect motion clinically. It may even be difficult under the fluoroscope to determine whether or not union is complete, but very often

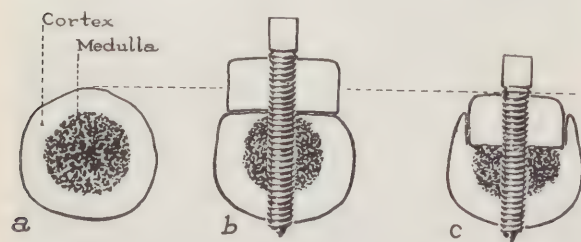


Fig. 9

- (a) Transverse section of bone.
 (b) Large bone graft shown in opposition to fragment off which part of cortex has been lifted to permit of broad contact of graft to fragment. Held in place by beef-bone screw through opposite cortex.
 (c) Inlay method. Beef-bone screw placed through graft and opposite cortex.

the patient can show the mobility by certain devices known only to himself. Many cases of supposed malunion, particularly of the femur, at the operating-table will prove to be delayed union with malposition. If such fractures are given sufficient time they will, in all probability, unite under "coaxing" measures. When a fracture is delayed in uniting there may also be malposition with threatened malunion. The callus is yet "green," and it may be possible to mould the part into better line if there is no overlapping of the fragments and the malunion is merely an angulation. The line should be corrected with the least possible manipulation and trauma to the reluctant callus by gentle correction of the deformity.

Even if we believe that union will ultimately take place this does not mean that operation should not be resorted to. When the prospects are placed before the patient and he knows that union may be hastened by an operation, he

usually chooses the operation, but it must be explained to him that union, even after intervention, will not occur in the normal length of time. It seems to be a rule of nature that once a callus has been broken down, it is much slower in the second or third attempt to solidify.

Various methods may be used to induce the callus of a delayed union to harden. I believe that time with fixation in most instances is the choice, but the prolonged fixation of the part always causes an osteoporosis of the bone and is the chief fault of this method. This method must be used intelligently, for no law with regard to time can be laid down. The decision on when it is time to abandon fixation must be made by the surgeon.

The Thomas dam method which consists of putting constriction about the limb above and below the fracture line produces a stasis and congestion.

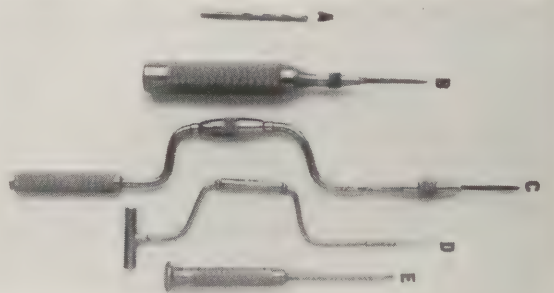


Fig. 10

Instruments necessary for the placing of beef bone screws: A, No. 17 twist drill; B, straight handled 10x24 tap; C, offset handle 10x24 tap; D, offset handle wrench with hexagonal headed beef-bone screw in socket; E, straight handle wrench.

The area is then gently pounded with a rubber mallet. Von Schmieden advised the injection between the fracture ends of venous blood taken from the patient. In the lower extremity weight bearing with sufficient support to prevent malposition or angulation irritates the bone ends and may by increasing the circulation and by the demand of function cause the deposition of more bone salts. None of these methods is uniformly successful but may be carried out with varying success.

It is not within the scope of this paper to enter into full discussion of the causes of delayed and non-union. Constitutional diseases play a minor part in the production of these conditions. Syphilis is given in text-books as a common cause, but I have seen only one case that really seemed to be caused by syphilis. No one cause is responsible for all cases of non-union, and I make

the statement with some uncertainty that the most frequent cause is the interposition of muscle or fascia between the bone-ends. Also there can be no question that many fractures are delayed in uniting because of too many inspections and examinations, once the normal period for repair has been passed. Naturally, the patient is worried, the attending surgeon is anxious, and repeated consultations are held, and each time the part is tested for solidity. I have seen union delayed by these too frequent examinations, but



Fig. 11 (314470)

Ununited fracture of the left humerus due to metastatic carcinoma. Operation for carcinoma of the breast two years before fracture.

I have not seen union delayed by the too free use of the röntgen ray, which is sometimes mentioned as a cause. Probably the movements of the fragments in the handling necessary to make the röntgenogram is responsible. It would be much better in such cases to apply another cast or splint and wait five or six weeks before disturbing the part. If union is not present then partial weight bearing may be used as an irritant to the bone-ends. This, however, should not be employed under three months from the time of the accident.

NON-UNION

Cases that are really in the non-union group have no callus-formation, frequently present the typical flail joint, and the non-union may be of ten or fifteen years' duration. There is no response to the "coaxing" methods and operation offers the only chance of restoration of function.

Non-union with pseudarthrosis occurs most often in the humerus (Figs. 5 and 6), undoubtedly due to the facts that muscle is interposed and fixation difficult to maintain. Delayed union occurs most often in the tibia because the fibula generally unites and the tibia hovers on the borderline of union, aided thus far by the splinting action

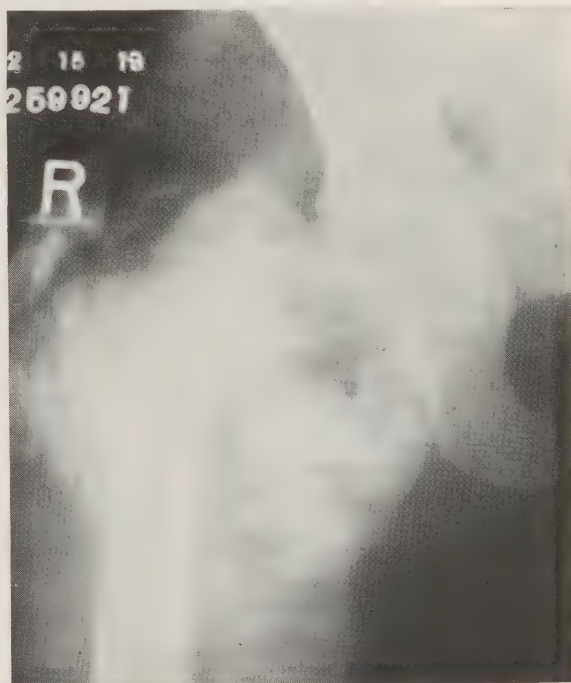


Fig. 12 (259921)

Old fracture through the greater trochanter, due to lues, showing the exuberance of callus produced in lues 3.

of the other bone. Just why this condition exists is difficult to explain. Typical flail joints are seen in the leg when both the tibia and the fibula are ununited. (Figs. 7 and 8.) Fractures of the neck of the femur are prone to go on to non-union because the long lower fragment is maintained in apposition with the short upper fragment with difficulty. I believe that the slipping by of the fragments in fractures of the hip is more common than is supposed, and what appears in the röntgenogram to be impaction is not impaction. Too much reliance is placed on

so-called impaction. Reduction of the fracture, according to the method of Whitman, is an excellent method of treatment in the recent cases. If the principles back of this method were better known, namely, the breaking down of the real or pseudo-impaction, extension and restoration of the normal length, and thus reduction, the holding of this reduction by abduction, internal rotation, and the holding up of the greater trochanter to its proper plane, there would be very few ununited fractures of the hip. In a series of cases which I reported recently not a single patient who came for correction of the deformity had received adequate treatment, so that in our cases at least the fault was lack of fixation.²

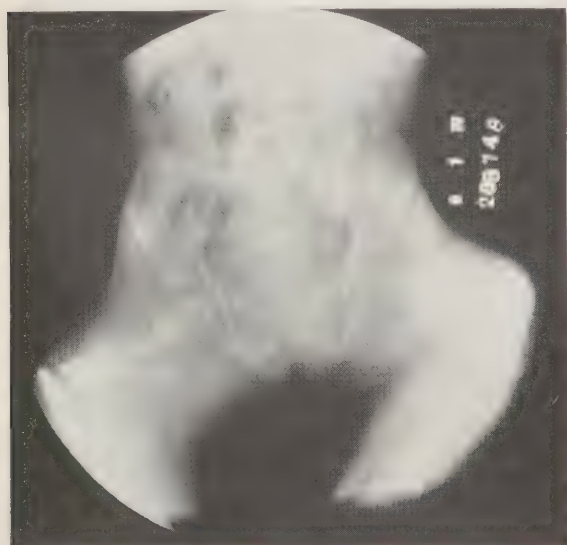


Fig. 13 (288748)

Ununited fracture of both femurs, child aged 7, due to osteogenesis imperfecta.

TREATMENT OF DELAYED UNION AND NON-UNION

The main points in the treatment of delayed union and non-union are similar, but there are more or less essential differences. It must be remembered that in the one case the fracture still evidences a tendency to unite, whereas in the other the fracture shows no evidence of attempted union. Naturally, these conditions are not always absolute. It may be stated definitely that in a delayed union we desire to hasten a union that is sluggish, whereas in an ununited fracture we desire to produce union. In both there can be no doubt that the bone-graft is the ideal method. The inlay method of Albee or the mass grafting is preferable to the intramedullary graft. (Fig. 9.) The sliding inlay procedure in delayed union is permissible in the tibia when the

bone is not osteoporotic, but I believe it should be used very rarely in the other bones. Owing to the too common osteoporosity of the fragments it is seldom suitable in the non-union group. Some of the failures in our hands have been due to this osteoporosity. For example, in an ununited fracture of the humerus in which the röntgenogram shows a marked osteoporosity of bone, the chances of getting union even by bone-grafting are slight unless the osteoporosity is over-



Fig. 14 (115338)

Fracture of left femur due to fibrocystic disease. Patient aged 17.

come first. This may delay the operation from three to nine months, and the patient often demurs. It has been our custom for some time to advise such a patient to use the arm as much as possible, assuring him that union will not be brought about by further fixation and that it is essential that more bone salts be deposited in the bone before even bone-grafting will succeed. Under exercise the bones, as shown by röntgenograms, gradually take on a normal appearance, and on persistent use the eburnated ends develop at the pseudarthrosis. In bones in this condition union is easy to obtain.

I shall not discuss the technic of the various types of operation, but I have found it most useful and almost essential to secure the bone-graft to the fragments in some manner. Beef-bone

screws are very convenient as they are readily absorbed.³ Owing to their brittleness it is important to tap the drill holes in both the graft and the fragment. As a rule we use a seventeen-twist drill, a 10-24 tap, and a 10-24 screw (Fig. 10), although different sizes may be used. Magnusson uses ivory screws. In delayed union the bone-grafting may not be essential. Compromise may be made, such as freshening the ends, performing the so-called "step" operation or side-to-side apposition of oblique surfaces. However, in a bona-fide case of non-union a large bone-graft should be used. We now believe that a large mass graft applied as a sort of a plate is the best. The bone-graft is, in all probability, absorbed and replaced by new bone, and during its absorption its action as an internal fixative splint naturally is weakened. Unless the new bone is laid down and solidifies as fast as the absorption of the graft takes place the graft will fracture.

The statement is sometimes made that bone-grafts resist infection well. This has not been my experience. It is true that if there is a small skin slough from an old scar in the operative field and the bone is exposed, it may heal over, but this can scarcely be called an infection. It is undoubtedly true, however, that infection much more rarely occurs in a wound in which a bone-transplantation has been carried out than in one in which a metal plate has been inserted. A bone-graft is a direct aid to the bone-ends to form callus, while metal plates are only an indirect aid in providing fixation.

STIFFNESS AND LIMITATION OF MOTION OF JOINTS

Stiffness and limitation of motion of joints may be caused solely by a loss of elasticity of the muscles and, if so, will usually yield to activity. In certain situations, notably the quadriceps extensor muscle, it is often most difficult to deal with. Lengthening of the quadriceps muscle, as described by Bennett, just above and to the sides of the patella may be necessary, but is more or less limited in the application. If sufficient degeneration of the muscle fibers has occurred to cause fibrous tissue to form, the normal elasticity and tone can never be restored and the disability will be permanent. Such a condition is analogous to an ischemic paralysis. Baking and massage and active motion must be pushed.

Sometimes the limitation of motion is due to an exuberance of callus, for example on the anterior surface of the humerus blocking the flexion

of the elbow or on the rim of the tibia blocking dorsiflexion of the ankle. Removal of such obstructions is indicated, but even then increased motion may be slow to develop, due to the shortening of the muscles and ligaments and possibly the reforming of the bone.

ISCHEMIC PARALYSIS

Ischemic paralysis may be encountered either in the upper or the lower extremity, although with much more frequency and of much more significance to the patient in the upper extremity. It has been more or less accepted that the cause is due to constriction from too tight splints or a cast. Unfortunately, this is often a cause, but I have seen cases of ischemic paralysis of the forearm, arm, and hand that never had been splinted or bandaged. I am confident that in several cases I have seen ischemic paralysis prevented by multiple small incisions in a badly swollen forearm, thus letting out clotted blood from beneath the fascial planes. There is no doubt that ischemic paralysis may be produced by the combination of swelling due to trauma and the pressure from the bleeding held in by the fascia. It is not easy to tell in a certain case whether the swelling is due to internal pressure of this nature, but it is much safer to incise in case of doubt, with care to avoid nerves and blood-vessels.

There are all grades of ischemic paralysis, and much may be done in the milder cases by massage, exercise, and the proper use of splints to stretch the muscles. The pathologic condition is a fibrosis of the muscles with contraction and loss of their elasticity. The prognosis depends entirely on the degree of fibrosis. Operations for lengthening of the tendons have been almost uniformly disappointing, and should be done only for certain definite reasons, such as correction of deformity. Amputation should not be considered in the upper extremity, for almost any sort of hand that may be used as a hook is better than an artificial hand. I have never seen a severe case of ischemic paralysis in the leg.

Fractures of the arm must be treated with care. If the pain following reduction of the fracture is extreme, the circulation poor, and if opiates are necessary, the surgeon should be suspicious and immediately loosen the splints or cast. If the circulation does not improve at once, or at least within an hour or so, small incisions should be made.

CARCINOMATOSIS

A fracture of one of the long bones may be the first intimation that a patient has cancer, and

it is not always possible to locate the primary focus. Union fails, and the patient comes for examination on account of the pain. The röntgenograph shows eating away of the bone, and no attempt at repair. (Fig. 11.) Nothing can be done.

TABES DORSALIS

The hip is a common site for fracture and non-union in this disease. It occurs in middle-aged persons, and on careful questioning it can be determined that the break really preceded the fall. The röntgenograph later shows a mild attempt at callus-formation. The treatment is nil, except specific measures, and the prognosis for union is poor. (Fig. 12.) Operation should not be considered. Function may be excellent.

OSTEOMALACIA

Under the term *osteomalacia* may be grouped several conditions that are in reality symptoms of a breakdown of the normal bone-metabolism. *Fragilitas ossium* often is seen in children. The fractures may be multiple, but they usually unite under proper care. *Osteogenesis imperfecta* signifies a group that are prone to multiple fractures, generally with resulting non-union. (Fig. 13.) Their treatment is quite unsatisfactory, but usually, if the child can be carried on beyond the age of puberty, fractures are less apt to occur.

FIBROCYSTIC DISEASE

Deformity may follow a fracture due to cystic disease of the bone, but rarely with non-union. The diagnosis may be made from the röntgenogram and the history. (Fig. 14.) Meyerding has published an interesting paper on this subject.

SARCOMA

A fracture may be a complication of sarcoma, but by the time the bone fractures the disease is so advanced that the fracture is only a part of the terminal picture, and amputation offers the only relief.

SUMMARY

Old fractures that are causing trouble sufficient to bring the patient for consultation form a very small portion of the total number of fractures treated.

Anatomic malunion does not necessarily mean functional malunion, and operation should be advised only for those patients who actually are in distress. Many cases of malunion that from the röntgenograph seem to be very serious, may clinically give very few symptoms. Delayed union may be coaxed into solidity. Non-union cannot be coaxed and should be operated on preferably by bone-transplantation.

Ischemic paralysis may be due to constriction from too tight splints or a plaster cast, but, undoubtedly, is sometimes caused by the swelling due to the trauma and the pressure brought on the muscles by a hemorrhage held within the fascial sheaths. If severe pain and impairment of circulation following a fracture of the forearm persist after all apparatus is loosened, multiple small incisions should be made to permit the escape of any retained hemorrhage.

Some old fractures may be due to carcinoma, *tabes dorsalis*, *fragilitas ossium*, *osteogenesis imperfecta*, *sarcoma*, or cystic disease.

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THE ANTRUM OF HIGHMORE*

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The rhinologist of today could, with almost equal appropriateness, be called a sinologist, as a very large part of his work is devoted to the

study and treatment of the various sinuses that drain into the nasal cavity. Of these sinuses the antrum of Highmore is far more commonly affected than all the other sinuses together. In looking over my records and x-ray plates I find

*Presented before the Interurban Academy of Medicine of Duluth and Superior.

that the maxillary sinus is diseased a dozen times oftener than the ethmoids, while the frontals are quite rarely affected, except in acute conditions. I also find that when ethmoiditis does exist the antrums are quite likely to be involved, though not invariably so. The greatest surprise that the rhinologist who is in search of focal infections meets, is the extreme frequency of antral abscess. It is not a rarity, but is extremely common, occurring hundreds of times every year in every busy man's practice if he is watching out for this. I do not mean doubtful cases, with small amounts of mucus and pus that have dripped into the antrum from the other sinuses, but genuine abscesses filled with foul-smelling pus. Rarely a week passes that I do not discover an antral abscess, and sometimes two or three of them. It is humiliating to think of the many cases in the past that were overlooked and went uncured through this negligence and ignorance on the part of the rhinologist. The fact of the matter is, that we have re-discovered the antrum. For very many years it has occupied an important position, especially connected with diseased teeth, but of late years it has taken on a greatly increased interest by the discovery that it is so commonly the seat of infection. The object of this paper is to set down a few points that have interested me in my work upon this bony cavity.

First, I wish to call your attention to a few anatomical facts in connection with it. At birth the antrum is no larger than a pea, and is lined with loose folds of mucous membrane that still further reduce its size. It is then located directly under the inner angle of the orbit, and closely connected with the nasal cavity. It may readily become diseased in the infant and young child, but, owing to its size and favorable position, it rapidly heals, along with the nasal disease that produces it. As the facial bones expand with age the antrum enlarges until about the eighteenth year, when it has reached its complete growth. A few cases of empyema of the antrum with fistula formation have been reported in young infants and very young children from time to time. Arellis claims that these fistulas in the maxillary bone are due to tuberculosis, and Skillern partially agrees with him, but thinks the breaking down of the bone was due to some kind of infection which had its origin in the sinuses, and in three of the cases reported a previous history of scarlet fever was obtained.

The size of the antrum depends upon the amount of absorption of bone that has taken place. (Skillern.) In the average size the height

is 3.5 cm. ($1\frac{1}{2}$ in.), breadth 2.5 cm. (1 in.), and depth 3.2 cm. ($1\frac{1}{4}$ in.), and the normal capacity is about 10-12 c.c. in woman and 16-18 c.c. in man. The antrum is pyramidal in shape, the base corresponding to the nasal wall and the apex to the juncture of the malar and superior maxillary. Occasionally the ethmoid cells dip down and encroach upon the antrum, sometimes completely dividing it into distinct cavities. I recently had an opportunity to operate upon two such antra. In one patient the antrum had repeatedly been irrigated, but no pus had been obtained. As pus was seen coming from under the lower turbinal, it was felt that the ethmoids were diseased. The x-ray plate showed a small antrum with several large ethmoid cells encroaching upon it. Upon opening the anterior wall the ethmoid cells were easily reached and broken down through the small antrum. A little later the whole ethmoid labyrinth was broken down and removed through the nose. Since then the discharge has entirely ceased. In the second case the antrum was entirely crowded aside by the large ethmoid cells that filled most of the space occupied usually by the antrum. The antrum in this case could not have been irrigated through the nose.

Regardless of encroachment of the ethmoids, the antrums vary greatly in size and location, dependent entirely upon the amount and direction of the absorption of bone that has taken place. Sometimes there is a hyper-absorption of the bone, producing very large cavities and very thin walls encroaching upon the neighboring cavities, and in other cases there has been no development at all or only in certain directions. In many cases the bony walls are entirely absorbed or of paper-like thinness. This is especially true of the anterior nasal and orbital walls. In the Caldwell-Luc operation I have repeatedly found the chisel to enter the antrum upon the first tap of the mallet, and in puncturing the antrum through the nose the needle enters through mucous membrane only, there being no bony obstruction in the way. This dehiscence in the bone may be a serious menace to the orbit in antrum operations. If the orbital bony wall is absorbed it is readily conceivable that the sudden release of the purulent contents of a distended antral cavity might throw so much stress upon the blood-vessels of the orbit as to cause a hemorrhage into this cavity. I have good reason to believe that this accident can occur.

An accident far likelier to occur is one brought about by the non-development of the antrum. An attempt to wash out an antrum that has im-

properly developed may lead to a perforation of the anterior wall of the antrum and the injection of fluid into the tissues of the cheek. This has happened to me in three different cases, and has convinced me that it is a real menace to every operation. The literature is strangely silent upon the dangers of this accident. To prevent its recurrence I have adopted the following measures: (1) Always *x*-ray the antrum; (2) the needle or trocar is protected by a shoulder situated one-fourth inch from its point; (3) precede the flushing of the antrum by a bulb full of air. If the air by chance gets into the cheek it will only produce an emphysema, which quickly disappears. These procedures have completely removed the danger of injecting fluid into the tissues of the face. In penetrating the walls of the antrum with the needle, a good deal of trouble is sometimes encountered by the density of the wall. In some cases of long suppuration the bone seems to have undergone a process of eburnation, such as we find in old chronic mastoiditis. In the aged the bone loses much of its animal matter and becomes very brittle, and may fracture easily.

The antrum is more often inflamed than any of the other sinuses. In our series of cases it occurs several times more frequently. The cause that ranks first is infection from the nose. It almost always follows acute infections of the nose. With the subsidence of the inflammation in the nose the antral disease subsides slowly, but owing to the poor drainage of the cavity it often does not entirely subside. At each attack of coryza the cavity becomes re-infected, till finally a chronic inflammation develops. Influenza is a common cause of this disease. Following last year's attack it seems to me that we have found more chronic antral abscesses than ever before. The teeth, of course, contribute a very large percentage of cases. Probably from 20 to 30 per cent of all cases are due to diseased teeth that extend directly to the cavity or by causing disease of the bone that forms the alveolar wall of the cavity. The diseased teeth may cause antral disease by direct contact through a carious root extend directly into the cavity or cause disease scesses burrowing upward, hidden caries, dead teeth, by periostitis extending from the alveolar process, or by infection extending through the intermediate circulation of the antral and dental veins. The overlying sinuses are sometimes a direct cause by draining into the antrum. The ostium of the antrum is so situated as to catch a part of the pus that drains from a diseased frontal or ethmoidal sinus. In the series of cases

that I have had under observation, five of them had a frontal sinusitis and eight more had a chronic ethmoiditis. These cases yielded promptly to treatment when proper drainage was established, showing that a true inflammation of the antrum did not exist, the pus being merely that caught from flowing in from above. Some of them remained healthy even though the original source of the pus continued as before. Others required a complete eradication of the superimposed sinuses before the pus could be stopped.

The symptomatology manifested by the diseased antrums in this series of cases has shown great variation. Many of them manifested so few local symptoms that no suspicion of their disease was entertained. Vague rheumatic pains scattered over various parts of the body indicating the presence of a focal infection in some part of the body led to the locating of the disease in the antrum. More than half of our cases were discovered through direct search to uncover the seat of the infection, the other symptoms complained of being so slight as to elicit no complaint. A cough referred to the chest, and existing either with or without an accompanying bronchitis, was a leading symptom in another large group of cases. This cough was easily identified as being a throat cough, caused by pus streaming down into the pharynx and even over the epiglottis into the larynx. This constant accumulation of pus kept the lateral walls of the pharynx inflamed and irritable, causing the persistent cough. These cases always revealed quantities of pus on inspection, both in the anterior and posterior nares. The mere presence of pus in the nose indicates nothing. It must be traced as coming from beneath the middle turbinal body to prove that it originates in the sinuses. If it comes continuously it does not come from the antrum. The antrum empties itself periodically or when the head is in a position to drain it fully. Pain is not a constant symptom of antral disease. In our series it occurred in only a small number of cases. When present it radiates over the side of the head involved, centering around the eye or in the occipital region. Many of these patients complained of not feeling well, and some complained of indigestion and distress in the epigastrium. A few were distinctly septic.

Bronchial asthma might be called a symptom of antral disease, as it is a frequent accompaniment of it, as well as it is of ethmoidal disease. The bacteria present in the diseased cavities are the offending protein that excites the bronchial

spasms. You will pardon me for the slight digression I want to make here in stating my findings with bronchial asthma. In many cases a direct relationship has been found to exist between asthma and disease of the antrum and the ethmoidal cells. This relationship has been found to exist much more often in ethmoidal disease than in antral disease. In my opinion the bacterial infection of the ethmoids is the prime cause of asthma when asthma is associated with nasal disease. An ethmoidal evisceration will many times profoundly modify the asthma for the better, and some cases will be entirely cured. The operation fails to entirely cure in many cases, though in nearly all of them much relief is afforded. The same thing takes place to a lesser degree in treating asthmatics with diseased antrums. The asthmatics breathe better after the antrum is irrigated, but they still have the disease, and if the irrigations are discontinued the disease soon reaches the same severity as before treatment was begun. If a radical operation is performed the asthma is permanently improved, though not quite cured. I have never seen an asthmatic cured by treating the antrum alone. I am a firm believer in the treatment of asthma by the removal of diseased areas in the nose, though the results are not all that are desired.

Diagnosis: The differential diagnosis of sinus disease is not always easy, and often calls for several examinations. The means that we apply are inspection, transillumination, suction, *x*-ray, and irrigation. These are invaluable, and their value corresponds to the order in which they are given. Transillumination gives us a valuable suggestion, but sometimes fails us on account of

the variation in the size of the antrums upon the two sides or on account of thickening of the walls of the antrum, due to former inflammatory attacks. In like manner we are often deceived by the *x*-ray picture, but irrigation generally clears up the diagnosis, except in those rare cases where the needle fails to enter the right diseased cavity.

There are many operative measures for treating disease of the antrum. Repeated irrigations will occasionally cure, but it takes a long time and is very trying to the patient. I have practically given up this method of treatment except in recent cases, where it does very well. In the chronic cases the Krause-Mikulicz operation, consisting of removing a part of the anterior body and making a large opening in the naso-antral wall, and the Caldwell-Luc radical operation, which consists of removing the anterior wall through the mouth, are the methods that I have followed. The latter is far more satisfactory, and results in a complete cure in the great majority of cases. Statistics given by Skillern show that in 297 cases there were 268 complete cures, though there were several recurrences.

The secret of success is thoroughly to remove all granulations and diseased tissues, especially in the anterior-superior angle of the sinus and upon the floor of the antrum. When thoroughly done the discharge quickly stops with little after-treatment. I have not found it necessary in any of my cases to do the more radical Denker operation, which consists of removing the entire anterior wall and the anterior end of the antral wall, throwing the antrum and the nose into one large cavity.



VENEREAL DISEASE CONTROL IN SOUTH DAKOTA

BY SHERMAN LULL, M. D.,

Director of Venereal Diseases, South Dakota,

SUMMIT, SOUTH DAKOTA

The origin of the venereal diseases is as much a mystery as the origin of smallpox or typhoid fever. Just how and when the gonococcus of Neisser and the spirochete of syphilis first attacked human tissue is equally a matter of conjecture, but that their effects now exist, to a greater or less extent, in almost every community is well known to every physician.

There are no perfectly satisfactory statistics regarding the prevalence of syphilis and gon-

orrhea, although a mass of indefinite or ambiguous statistics has accumulated in this and other countries, before, during, and since the World War, which are entirely too long to give even a summary of them in this paper; therefore let it suffice to say that from 8 to 20 per cent of the entire population of the United States are affected by syphilis, that from 50 to 60 per cent of all men have, or have had, gonorrhea, which is the most prevalent of all communicable diseases except measles, that the venereal-disease rate among approximately the second million drafted men,

*Presented before the Huron Medical Society, Huron, S. D., July 1, 1920.

rated by states, ranged from 1.3 per cent in the state of Vermont to 15.65 per cent in Florida. With the single exception of Vermont, the rate in South Dakota was found to be the lowest, and this was 1.53 per cent. Among women, practically all prostitutes are infected and have chronic gonorrhea. And while gonorrhea is practically non-existent among unmarried women of good repute, it is, unfortunately, no rarity among respectable married women, who have been infected by their husbands, who thought they were cured, while the unsuspecting wife remains totally ignorant of the real cause of her disability, or the necessity for special or surgical treatment of her pelvic organs.

The extensive prevalence of venereal disease which was discovered through the examination of men for military service, led to extensive research and investigation relative to the prevalence and far-reaching effects of these diseases among our civilian population. One of the striking results of these investigations was, that a much larger percentage of the diseases of the circulatory and nervous systems, and the diseases of the insane, the feeble-minded, the blind, the crippled and deformed, and also the patients of the gynecological surgeon, are due, either directly or indirectly, to venereal disease than was generally believed.

Relative to the prevalence and far-reaching effects of syphilis, I quote from Dr. John H. Stokes, Syphilologist of the Mayo Clinic, as follows:

Syphilis is one of the most remarkable diseases which affects the human race. It is a master disease, the peer, and indeed the superior, of tuberculosis in the wide range of its influence over the fate of mankind, present and future. There is not a tissue or a structure of the body which syphilis cannot affect, nor is there an aspect of the entire science of medicine in which it will not be encountered. Sir William Osler coined the famous phrase which for all time expresses the relations of syphilis to medicine, "Know syphilis in all its manifestations and relations, and all other thing clinical will be added unto to you." No lane is so long that one may not find syphilis at its turning. The disease has changed the destiny of mankind upon earth. If it should cease at this moment to be transmitted, its effects would not disappear from the world within two and perhaps three generations. Few, indeed, of living human beings can boast an ancestry free from its remote effects.

Regardless of the absence of accurate statistics relative to the prevalence of venereal diseases, and notwithstanding the general lack of definite knowledge as to the extent of their effects, we have sufficient evidence of their destructiveness to the health and efficiency of humanity fully to warrant increased activities of our health officers

in endeavoring to prevent, as much as possible, the further spread of these diseases.

The problem of venereal disease prevention and control is the most difficult with which health authorities are called upon to contend, for the reason that the incidence of these diseases is primarily due to a natural instinct and passion which never was, and never will be, controlled by law.

The general plan of control which has been adopted by this and other State Health Organizations, contemplates three separate programs of activities for the accomplishment of the following objects: first, the control of carriers; second, adequate treatment of the infected; and third, education of the public in regard to sex hygiene and the venereal diseases.

The program for controlling the infected includes legislative enactment and regulations of the State Board of Health, requiring the reporting of all cases by physicians and other persons in attendance or dispensing or furnishing remedies or the treatment for a case of syphilitic or gonococcal infection, or a case suspected of being one of syphilitic or gonococcal infection; requiring a report of all cases of syphilis and gonorrhea who refuse to continue treatment until cured; and requiring physicians and others treating these diseases to instruct him or her in precautionary measures for preventing the spread of the disease, the seriousness of the disease and the necessity for continuing treatment until cured. Under this program, which has been in operation in South Dakota the past eighteen months, there have been reported a total of 1,807 cases, or 1,403 cases of gonorrhea, 363 cases of syphilis, and 41 cases of chancroid.

The South Dakota State Board of Health requires the reporting of sources of infection whenever possible, but it is a noticeable fact that many physicians, especially those who report the larger number of cases, never report the source of infection; however, it is preferable to attribute this fact to inability, rather than to neglect or to business and financial reasons. If a person with leprosy were found associating with any community in this state, that patient would be immediately isolated at any cost; and yet it is quite evident that one little street-walker will spread more disease, cause more misery, ruin more lives, and will be a contributory cause of more premature deaths, in the course of a few years, than all the lepers in South Dakota since the beginning of statehood. Complying with this requirement of the Board of Health, there have been reported

121 sources of infection, all of whom have been placed under treatment, through the co-operative efforts of city and county health officers, and law enforcement authorities. A provision in our venereal-disease law passed by the 1919 legislature which makes it unlawful for anyone infected with syphilis, gonorrhea, or chancroid to expose another person to infection, has been of value to us in securing the aid of law enforcement officers in apprehending carriers.

The success of this program of control depends largely upon the physician's compliance with the law relative to reporting venereal-disease cases; and, although this law provides a maximum penalty of \$1,000 fine and one year imprisonment, and other state laws define the failure to report communicable diseases as unprofessional conduct, which is sufficient grounds for the revocation of license, we have evidence of numerous failures to report, and it is reasonable to suppose that the severity of the penalty may be a cause for hesitancy on the part of the health officers to prosecute such violations of law.

The program for treatment of the infected includes those who are unable to finance their own treatment, and those under arrest or detention, or in penal institutions. For the carrying out of this program, in addition to furnishing free arsphenamine to health officers for the treatment of indigent syphilitics, there have been established free venereal disease clinics at Sioux Falls, Aberdeen, and Lead. These clinics have treated a total of only 164 patients, for the reason that there has not been provided means for hospitalization or even detention homes for such patients. The fact that the commercial prostitute and other female carriers are the most prolific sources of infection, and the difficulty in retaining such patients under treatment until cured, are sufficient reasons to induce the state to provide a detention home, hospital, and reformatory for venereally infected females.

The beneficiaries of such an institution should include, not only the professional prostitute, but those infected girls and women who sin sexually in return only for the pleasure given, or the company of the men with whom they consort. "Charity girl" is the name given this class of women by the commercial prostitute as a term of derision. These girls frequent practically the same places as those in which prostitutes are to be found, particularly the parks, dance halls, and summer amusement places. They are a danger to society for many reasons, principal among which is, that they contaminate other girls by

their invitations to accompany them to cafes, pleasures places, or on automobiles rides, in return for which they lend their bodies. Their lack of knowledge of the effects of contact with men, renders them infinitely more liable than the professional prostitute to spread venereal disease. While many of these continue at their work, often for quite a lengthy period during the beginning of their degeneration, their moral life becomes eventually so warped that they almost invariably end as professional prostitutes.

Investigation has brought out the fact that a large majority of these girls have no ethical standards and believe that they have as good a right, as it is generally supposed men have, to lead a double life; that they have a right to the pleasure they can gain from their bodies if they can do so without exposure. Investigation also indicates that this spirit is growing with alarming rapidity, hence the necessity for institutional training and treatment.

The control of the venereal diseases is largely dependent upon the adequacy of individual treatment by the physician in charge. The acute symptoms of syphilis and gonorrhea are so easily obliterated that the victim of these diseases too frequently leaves the office of his medical advisor secure in the thought that he is cured, when in truth he is more dangerous from a public-health standpoint than when he first entered, for the reason that he believes he is free from the infection, released from control, and, forgetting his precautionary measures, infects others.

It is a regretted fact that sufficient evidence has accumulated in the office of the Division of Venereal Diseases of the State Health Department to warrant the conclusion that inadequacy, incompetency, or indifference in the diagnosis and treatment of syphilis and gonorrhea is very common among physicians in this state at the present time. As a result, patients often seek the quack, the advertising specialist, the patent medicine fakir, or the druggist for the relief they expected to receive from their physicians.

Efforts have been made by the State Health Department in co-operation with the United States Public Health Service to warn patients against such improper forms of treatment, and to induce them immediately to place themselves under the care of a qualified physician; also an effort was made to induce druggists to pledge themselves not to prescribe or recommend any remedy for venereal disease, nor to refill any prescription for these diseases except on the request of a qualified physician still in charge of

the case. As a result of this, approximately three hundred druggists of this state pledged themselves to this agreement. However, if we are to succeed in our efforts to have venereal patients seek treatment from physicians rather than druggists, it will be necessary for physicians to give them proper and adequate treatment when they call for it.

The educational program is carried out by the posting of signs and notices, the free distribution of books, pamphlets and other printed matter, newspaper publicity, lectures, exhibits, and moving-picture films. It is believed that education is the most effective weapon that can be used in the fight against these diseases, and for this reason our activities have been largely educational.

It is believed by authorities on the subject that sex education should begin with the parents and early teachers of every child, through primary instructions in botany and biology, including the reproduction of plant life and continuing upward through the lower to the higher forms of animal life as the child grows older; and before the adolescent period is reached the child should be instructed in the reproduction of human life and social hygiene in connection with the study of general physiology and hygiene. We believe that sex ignorance is one of the chief causes of sex immorality and the venereal diseases; and,

although we realize that our method of imparting sex knowledge is crude and subject to criticism, we consider it the best means at hand for the dissemination of at least some sex information, and to awaken the public mind to the necessity for general sex education.

If the physicians of this state will properly report every case of venereal disease, including the source of infection, and adequately treat each case until cured, giving each patient thorough instruction relative to the danger of infecting others, they will have done their duty and a real service to the people of the state in controlling these diseases. But it remains for the legislative department of our State government to appropriate sufficient funds, not only for the maintenance of the institutions already established, but for the establishment and maintenance of a detention home, hospital, and reformatory for venereally infected females; and then with the educational campaign that is being conducted by the State Health Department, in co-operation with the United States Public Health Service, the American Social Hygiene Association, and other educational authorities, I venture the assertion that in a comparatively short time the number of venereal infections in South Dakota will be decidedly reduced.

MALIGNANT ENDOCARDITIS*

By C. W. PETTIT, M.D.

MINNEAPOLIS, MINNESOTA

The present-day mode of life has given us a large number of heart lesions and heart conditions to deal with, the most serious of which is the valves infected with the streptococcus hemolyticus, or the so-called "malignant endocarditis." The onset of this disease is so insidious and the outcome so uniformly fatal, that it can well be termed one of the major anxieties in the practice of medicine. The first author in America to draw attention to this disease was Sir William Osler, in 1885. He, however, in his article, referred to three earlier observers. The disease has been given many names, among them being "chronic septic endocarditis," "chronic ulcerative endocarditis," "chronic infectious endocarditis," and "septic rheumatic endocarditis," but is known mainly as chronic malignant endocarditis.

The disease occurs nearly always in people who have had a previous valvular defect. In most cases we get a history of rheumatism, but it may attack a syphilitic or an arteriosclerotic valve. It is very unusual to find it in a patient in whom decompensation has taken place. The frequency of the disease has been much underestimated. It is not as common as rheumatic or syphilitic endocarditis, but with modern methods of diagnosis it ceases to be classed a "Sunday disease." Given a leaky valve, a daily temperature, progressive anemia, painful nodes, and a positive blood culture, and the diagnosis is practically sure. It is possible, however, to have a non-hemolytic streptococcus in the blood-stream without involvement of the heart valve. Non-hemolytic streptococci are frequently found in tooth-sockets, tooth-roots, infected gums, in all parts of the throat, in diseased accessory sinuses, in uterine infections, in the normal intestinal

*Read before the Hennepin County Medical Society, October 4, 1920.

tract, in bronchial infections, and in local foci of infection in any part of the body. Such infections usually are not as severe as those due to a hemolytic streptococcus. From all these places of origin, the cardiac valves may be infected, but they are rarely affected unless previously diseased. The finding of the organism in the bloodstream alone does not of itself constitute a diagnosis of the dreaded disease. The other clinical evidence must be carefully weighed. If found repeatedly with no primary focus present, one may be reasonably sure he is dealing with a case of streptococcus endocarditis of subacute type; but, as I have said before, it will be nearly always in people who have had a previous valvular defect.

The onset of this disease is so insidious that there is no history of a primary infection. The earliest symptoms are often taken for an ordinary cold or influenza. The case I am about to report thought she caught a cold during a college jaunt on a windy day.

The disease may occur at all ages, but is rare in children and old age. The earliest common symptoms are lassitude, loss of appetite, vague pains, chills or chilliness, vertigo, headache, cough and feverishness, and, not so frequently, some cardiac symptoms. The constant symptom, however, is fever. There is a possibility of a patient becoming spontaneously bacteria-free, and being seen for a few days with no symptoms whatever except lassitude. The symptoms to look for are chills, fever, sweating, anemia, petechiæ, tender nodes, tender sternum, pulmonary symptoms, splenic enlargement, joint pains, and peculiar pains in various parts of the body. The case to which I just referred above complained continuously of what she described as a "cork-screw" pain under the left shoulder-blade.

Most of the above symptoms are fairly constant except the petechiæ; they come and go and should be looked for repeatedly. Cough is a very common symptom even early in the disease. According to some observers the cough is due to congestion of the lungs, while others contend that it is due to an enlarged node irritating the trachea at the bifurcation, as these are fairly constantly found at the post-mortem. We may have pain, tenesmus, retention of urine, marked tenderness in the region of the kidney, coming on suddenly, due to an infarct. In this connection, also, vomiting may be a very distressing and misleading symptom. It is very common to find albumin in urine early, probably due to tiny emboli in the glomeruli. The spleen is usually

enlarged and may be soft or hard. If very large, one may mistake the disease for Banti's or splenic leukemia or pseudoleukemia. Splenic infarcts are common and cause a lot of pain.

The gastro-intestinal symptoms are many and varied. Distress after eating, vomiting, epigastric pressure, or loss of appetite may lead one to suspect malignant disease of the stomach or, at least, a serious surgical condition. Operations have been performed on such cases to the sorrow of the surgeon. Anemia is a very characteristic and constant symptom. It is of the secondary type and may become quite marked as time goes on. The color of the face becomes pallid, but it is a peculiar white and might be called a dirty or ashy white. Frequently we get a brownish pigmentation not at all unlike pigmentation in patients with tricuspid disease. The petechiæ I have mentioned before are quite red when first formed, and are due to tiny emboli. If they have a white center they are worth more as a diagnosis, for this helps to differentiate them from the hemorrhages of purpura hemorrhagica and those of cerebrospinal meningitis. Another very important point to remember is that the petechiæ of malignant endocarditis are very tender. Large emboli may cause greater damage. The most common location of these is the brain. Of fifty cases of embolism tabulated by Dr. Rashbaum, twenty-seven were intracranial; however, any artery in the body may be affected. One may have petechiæ in the orbit of the eye and occasionally small hemorrhages.

Mode of onset: I have already referred somewhat to the insidious mode of onset and varied symptoms, but I wish to group the modes of onset as regards similarity to other diseases. It may come on in the following way:

1. Like typhoid fever, with chilliness, sweats, headaches, and drowsiness.
2. Like malaria, with intermittent chill and fever.
3. Like influenza, headache, general pains, malaise, weakness, and nasal symptoms.
4. Like tuberculosis of the lungs, with fever, cough, loss of weight, sweats, pain in the chest, weakness, and, maybe, hemoptysis.
5. Like tonsillitis, with enlarged tonsils and pain in the neck.
6. Like rheumatic fever, with painful joints and general malaise.
7. Like acute Bright's disease, with pain in back and bladder symptoms.
8. Like malignancy, with vomiting, distress after eating, loss of appetite and hyperacidity.

9. Like appendicitis with abdominal cramps and some rigidity.

Final outcome: Malignant endocarditis is almost uniformly fatal. Dr. Libman, of New York City, who has seen a large number of these cases, reports four recoveries in definite cases with positive blood-cultures. The usual cause of death is from pulmonary edema, due to cardiac insufficiency. Cerebral emboli occasionally end the scene. Other causes of death may be pulmonary infarcts, progressive anemia, and renal insufficiency.

With this résumé of the symptoms and course of this disease, I wish to report the following case:

Miss S., aged 19, during last Thanksgiving vacation came home from Carleton College, saying she was very tired from taking an eight-mile walk two weeks before. She had contracted a cold about a month before, according to her report, which the walk had aggravated, and, instead of the usual vivacity of a girl of this age, she was too tired to talk, as she expressed it. Examination was negative, except for a temperature of 101°, pulse of 84, and a heart lesion which she had had, to my knowledge, for four years, following an attack of rheumatism at the age of fifteen. Repeated examination of the heart by screen and percussion had failed to show more than a moderate amount of dilatation, and during this four years she had excellent compensation, she carried on her high school work and took part in the usual social activities, with apparently no ill effects, and entered college in good, but not a robust, condition, and carried on her work very well until Thanksgiving, when I was called. The patient was promptly put to bed, but in spite of rest she continued to run a temperature of one or two degrees every day above normal. I thought at this time I could detect a change in the sound of the heart murmur, which made me suspicious that I might be dealing with a malignant endocarditis. I could find no petechiæ, painful nodes, or enlarged spleen to further my suspicions.

Two weeks later I asked Dr. C. R. Drake to make a blood-culture, and he reported a streptococcus viridans in the blood-stream. Every effort was then made to learn methods which promised a ray of hope in combating the malady. Iron was used by mouth and hypodermically to combat the anemia. The ice-bag was her constant companion. The best of nourishment was given, and absolute rest enjoined; transfusion and autogenous and stock vaccines were discussed with the parents, but, not promising a cure, these were declined at the time. During December her temperature ranged from 99° to 103° daily. There was no discomfort except the pain under the left shoulder-blade, which I have mentioned before. Her appetite was excellent, but there was a perceptible loss of weight. The hemoglobin was 80 per cent and the leucocytes and erythrocytes were normal in number and appearance.

In January conditions remained about the same. There was one week in which the temperature never got above 99°, the pulse was steady at 80 to 90. By the last of February the hemoglobin had dropped to 65, and the edema of the face and limbs was very noticeable. She complained of partial blindness in one

eye and a constant roaring in the ears. I asked Dr. J. A. Watson to inspect the eye-grounds and ears, thinking possibly we had an intracranial embolus to deal with or retinal hemorrhages, but his findings were negative. A week later both ears were discharging a mucopurulent pus. Examination of this pus was negative as far as streptococci were concerned. She never had any earache, and the tinnitus did not cease when the ears began to discharge. At this time I found the first petechia, a tiny red tender spot on the palmar surface of the hand. The spleen was now palpable and very tender. The heart murmur was loud and heard over the whole sternum and transmitted around under the axilla to a point beneath the left sternum, where she complained of the continuous boring pain I have mentioned before. Pressure over the sternum now caused intense suffering. The parents decided at this time they wished transfusion, which gave little or no relief. From this time on to the 30th of June, when she died, there was a multiplicity of symptoms. Dyspnea, renal engorgement, cough, gastric distress, tender nodes, constipation, and severe lancinating pains followed in rapid succession. The face took on an ashy-white color, hard to describe, but once seen it will never be forgotten. Twenty-four hours before her death the whole right arm was mottled with tiny petechiæ, which stood out in marked contrast on the exaggerated white background.

The final cause of death was apparently due to pulmonary engorgement and edema.

In concluding my paper on this disease, I wish to emphasize the following points:

1. In its beginning it may simulate any one of a dozen diseases.
2. That while the disease has a predilection for a valve weakened by rheumatic fever, it may attack a luetic or an arteriosclerotic valve.
3. That the disease becomes surgical only when there is a mixed infection resulting in an abscess of the spleen, liver, appendix, or in formation of renal calculi or similar evidence of focal infection.
4. Blood-cultures should be made in all cases of fever if the cause is not apparent. This is especially true if a valvular defect is present.
5. That the outcome of these cases is almost uniformly fatal, that our present-day methods against this disease are powerless, and that we ought to have the courage to give up the old useless procedures and look for a method of combating this dreaded organism of whose many depredations in the human body endocarditis is only one.

In final conclusion, I wish to pay tribute to a paper read here a month ago by Dr. T. H. Sweetser, and the able discussion by Dr. H. E. Robertson, because to such laboratory investigators as these men must the internist and also the surgeon turn for help and inspiration in combating the ravages of the streptococcus in its various phases.

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DR. ALFRED EUGENE SPALDING

The medical profession of Minnesota, and the State Medical Association in particular, was shocked to hear of the death of Dr. Spalding, who died at his home at Luverne on Saturday, December 4, 1920, of pneumonia.

Dr. Spalding has been for many years a prominent man in medical organizations, and ever since the State Association has had a Council, Dr. Spalding has been a member of it. Through his unfailing courtesy and diplomacy he has assisted the Council in guiding the Association over many rough places.

He was a man of very attractive manners, a man who was genial and friendly, and he knew the worth of his medical friends. He had no axe to grind, and he was honored and hailed with joy at every meeting. He was earnest in his medical work, and was looked upon as one of the prominent and scientific surgeons of the day. The people in Luverne, of course, will greatly miss his advice and counsel.

Dr. Spalding has always been a friend of THE JOURNAL-LANCET, and we shall miss his courtesy and co-operation.

Dr. Spalding was born in 1851, and graduated from the University of Pennsylvania in 1874. He began his practice in Minnesota in 1883.

MEDICAL POLITICS

At a very large meeting of the Hennepin County Medical Society, held on Monday, December 6, the question of endorsing the reappointment of

Dr. Mabel Ulrich was introduced by resolutions. Further resolutions were introduced which expressed the unanimous opinion of the Society that this large medical body stood in favor of the reappointment of Dr. Mabel Ulrich a member of the Minneapolis Board of Public Welfare and also the reappointment of Dr. Harrington head of the department of health. Incidentally this action involves criticism of an alderman who is a member of the Society. The resolutions stated that he was "a member in good standing." This means, of course, that he is in good standing because his dues have been paid; but he seldom, if ever, attends any of the meetings of the Society.

This whole matter has been before the City Council and before the Board of Public Welfare for months, and had reduced itself to a lot of pusillanimous politics in which the chairman of the Committee on Health and Hospitals of the City Council came out at the small end of the horn. He is evidently a very poor loser, for in the minds of the public and in the minds of medical men he has been defeated for some time, and it looks as if the time had come when the Council should seek another man for the chairmanship of this committee.

Both Dr. Ulrich and Dr. Harrington have rendered inestimable service to the city of Minneapolis, and they should have been endorsed long ago, notwithstanding the fact that Alderman Kistler claimed there were any number of men who were quite capable of filling Dr. Harrington's place.

The importance of supporting faithful physicians who do splendid and fearless work in public health matters, and who, in the discharge of their duties, necessarily oppose political tricksters, cannot be overstated. We take pleasure in placing before the medical profession the splendid endorsement given by the Hennepin County Medical Society to these faithful and efficient public servants. The resolutions of the Society are as follows:

Resolved, That the Hennepin County Medical Society indorses the present plan under which the department of health is being conducted.

That the Hennepin County Medical Society indorses the principle of being represented on the Board of Public Welfare by a physician who is in good standing in our society.

That the Hennepin County Medical Society approves of the manner in which the Minneapolis Health Department is being conducted by the present health commissioner.

That the Hennepin County Medical Society approves of the manner in which the medical member of the Board of Public Welfare has functioned.

That we, the members of the Hennepin County Medical Society, deplore the apparent attempts of certain members of the Council to embarrass public health officials by a resort to the practice of petty politics, and be it further

Resolved, That the Hennepin County Medical Society, through its Board of Censors, at once investigate the public statements of the member of the City Council, who also is a member of the Hennepin County Medical Society in good standing, and ascertain the truth or falsity of these statements, providing this member has been correctly quoted, and deal with the said member as evidence warrants.

THE SOUTHERN MINNESOTA MEDICAL ASSOCIATION

The annual meeting of this growing society, which took place at Mankato on the twenty-ninth and thirtieth of November, was a strikingly interesting one, due, as usual, to the indefatigable efforts of the secretary and his program committee. The society now has a membership of 408, and at the last meeting 68 new members were received, making in all 476. In point of attendance this society is in active competition with the state organization. Perhaps one might say it is looked upon from a different angle; but, from whatever angle you investigate it, it is a marvelous society.

It is interesting to note that at this meeting 258 were registered, which is unusual for a district organization. Of this number 39 were from Minneapolis, 18 from St. Paul, 20 from Mankato, and 17 from Rochester. There were 10 visitors from Wisconsin, 14 from South Dakota, 10 from Iowa, 11 from Nebraska, 7 from North Dakota, 3 from Washington, one from Maryland, 4 from Illinois, and 2 from Michigan, thus 10 states were represented.

The guests of honor outside of the state of Minnesota included Dr. Hugh Cabot, of the University of Michigan, Ann Arbor; Dr. E. B. Freeman, of Johns Hopkins Hospital; Dr. Harry E. Mock, of Rush Medical College, Chicago; Dr. Frank Smithies, of Chicago; Dr. Reuben Peterson, of Ann Arbor; Dr. Emil G. Beck, of Chicago; Dr. Truman W. Brophy, of Chicago; Dr. Wm. L. Shearer, of Omaha; and Dr. H. Winnett Orr, of Lincoln, Neb. All of these men read papers before the society, and all of them presented a series of suggestions which covered the field of medicine and surgery. The local talent, that is, from Minnesota, embraced men from Minneapolis, Saint Paul, and Rochester. The meeting may be looked upon as a gathering of physicians from many states to hear local and foreign celebrities.

The afternoon session was interrupted, on the first day, by a dinner given by the ladies of the Eastern Star at the Masonic Temple, after which came the formal introduction of the guests and one or two short talks by members of the Association. The evening session began at eight o'clock, and when the writer left at twelve one speaker was still waiting for the end of his paper to appear. Some of the papers were too long, but, in spite of this, they were interesting and held the attention of the audience. The discussions were necessarily limited, as the program committee had arranged for the men who were to discuss each paper presented. This gives but little chance for the man not on the program to give an opinion or to discuss a subject of special interest to him. Then, too, the time is too short for a general discussion of a number of papers which must be put through in a specified time.

With the increase of numbers in the Southern Minnesota Medical Association, the question of entertainment becomes a rather complex one.

The summer meeting will be held at Winona in 1921, and the winter meeting will undoubtedly be held in one of the larger cities because it is necessary to accommodate the ever-increasing attendance.

Dr. A. F. Schmitt, chairman of the program committee, announced his intention to retire, and evidently desires to retire on his laurels. The nominating committee declined to hear his voice, but did make a concession in that he was made general manager of the whole organization, with a very modest compensation to cover his actual expenses. Dr. Schmitt may think that he has earned a much needed rest, but, judging from the attitude of the committee, the other members will throw most of the work on Dr. Schmitt, as usual.

A great part of the success of the meeting was due to the visitors from outside states, although the men from Minnesota towns who were on the program did what they could. But to see, to hear, and to come into close contact with these celebrities from away was a great pleasure, and did much to attract the large registration. Each of these men had something new to present, and presented it in an inimitable way, giving the best that was in him.

It is to be hoped that some of the other societies in Minnesota will follow in the footsteps of the Association, and attempt in some sort of manner to copy its essential improvements and attractions.

The Chairman of the Committee of Arrange-

ments, Dr. Schlesselman, saw that all guests were provided with accommodations either in a hotel or a private house. This must have been no inconsiderable task.

The business end of the meeting began before eight o'clock in the morning. This in itself shows the activity of the committee, and its willingness to work.

The physicians of Mankato entertained the entire body at a luncheon Tuesday noon. Everything was done that could be done to make this meeting a success, and it was a very great success.

THE TREATMENT OF SYPHILIS

It is interesting to indulge in retrospection and note the changes that have occurred in the last twenty years in the treatment of syphilis. Perhaps it would be just as well again to call the attention of the profession to the fact that syphilis is often unrecognized. This has been proven by the experience of the older practitioners, who are not very well grounded in the technic of diagnosis, and who formerly had no laboratories to guide them in reaching a final conclusion. Then, too, the drugs that were used in the olden days and the drugs used at the present time do not compare in their multiplicity.

The old family doctor had his way of arriving at a tentative diagnosis, at least; and, wherever he was uncertain as to the findings, or perhaps the lack of findings, that came to him crudely presented and almost as crudely analyzed, he decided that an alterative was advisable, and his favorite prescription was a combination of some of the salts of mercury and iodide of potassium. This he put in a menstruum, syrup, or elixir, or as was commonly used, a compound syrup of sarsaparilla, with the faith that some of the herbs that went to make up this compound were of medicinal value as an alterative. And not infrequently his patient recovered under this prescription, and he, with a certain definite feeling of doubt as to the diagnosis, accomplished his ends unknowingly. He did not realize that the masses were likely to be more or less syphilized. He did not consider, perhaps, that the father or mother, or the grand-parents perhaps, passed on to their progeny a diseased organism, or an organism which developed a disease that remained latent until some strain or pressure upon the individual brought it out. This he very often did not know was an old syphilis; neither did he suspect that many of his friends and patients were likely to stray from the path of virtue and acquire a luetic infection. He only knew that they had ill-defined

symptoms, pains, and aches, or were wakeful at night; that they complained of headaches and pains in their bones, and had certain skin lesions, which to him were unfamiliar symptoms. But he heroically and resolutely put them on his old favorite stand-by, and they, having faith in their doctor and his drugs, frequently got well.

This should teach the profession of the present time that mercury is still a very reliable and safe drug to use, or at least to exhibit, partly for its diagnostic possibilities, in many of our unclassified diseases. We know that less than 50 per cent of the people who have old or new syphilis will give a true Wassermann re-action, hence the administration of mercury will probably continue as long as the world lasts.

Then, as the times improved, medical education advanced, the art of diagnosis was more carefully taught, and we began to recognize the presence of a specific lesion and the spirocheta of syphilis. And still we continue to treat our patients with mercury in some form, whether by inunctions, by hypodermics of salicylate of mercury, or by giving calomel and other mercurial derivatives, and by the introduction in the spinal canal of small doses of mercury, and the patients improve.

Then came the wonderful experiments of Ehrlich and his famous "606," and, later, his final experiment which produced neosalvarsan. The result is that the majority of luetics have been treated, if possible, with salvarsan. As usual in such cases, the salvarsanization of the patient was often carried too far, and many of the old chronic diseases which are now known to be primarily specific in origin continued to get salvarsan in varying doses, and according to the varying methods of the administrators. We began to feel that chronic nervous diseases might have many of their symptoms alleviated by persistent use of salvarsan, and this has proved true. Many cases of tabes and other syphilitic manifestations are much improved, at least for a time, under small and frequent injections of salvarsan. This prompted the introduction of preparations similar to salvarsan, and for a time the country was flooded with imitations and false products, which, doubtless, still continue to be sold as arsenical preparations of value.

When the final analysis comes, however, time may show that many of our chronic syphilitic diseases have been overtreated, or treated unnecessarily, and this is particularly true of cases that are old and that have chronic arterial lesions and chronic sclerotic areas in tissue.

These cannot be dissolved by salvarsan, and why should a perfectly good dose of salvarsan be wasted on a perfectly hopeless case? Why not go back to something that is perhaps equally efficient and very much less expensive,—why not go back to mercury in some form?

The old system of inunction is still much used by some medical men, but of all the nasty stuff that can be rubbed into the skin of a man who has any pride the old mercurial ointment is the most objectionable. A 50 per cent mixture of calomel in a proper base will do equally well, and is much cleaner. The hypodermic method (injections of mercury into the muscles) has done much to make the treatment more cosmetic, and leaves less disagreeable after-results. Furthermore, the latter treatment can be more readily watched and regulated. It is said that the mercurial injections, particularly of the insoluble forms of mercury, can be followed admirably by the Röntgen ray shadows. This, of course, does not apply to the soluble preparations.

When mercury is introduced into the gluteal muscles, by hypodermic methods, it requires from four to ten days for absorption, but when introduced into the lumbar muscles the absorption takes place in anywhere from two to twenty-four days, consequently the gluteal region seems to be the better route. The use of calomel ointment is slow, not only in absorption but in its effect, and may run over a period of more than thirty days. Gray oil, which was used in earlier times, is virtually unabsorbed, and is not a very safe form of mercury to use. There is comparatively little danger from the use of mercury if carried out properly. The latter statements are based on a paper read by Cole, Litman, and Solomon, of Cleveland, and published in the *Journal of the American Medical Association* of December fourth.

We must also remember that the treatment of syphilis is very much improved by frequent spinal puncture or drainage of the spinal canal, which not only relieves the probable pressure which exists in the nervous system, but intensifies the medication which is carried on by mercury or salvarsan.

with 79 illustrations. St. Louis: C. V. Mosby Company, 1920.

The second edition of this work differs from its predecessor chiefly in that it is more complete and that the newer investigations of the past three years have been added. The subject of "Basal Metabolism" has been taken up in a very extensive manner, both as to theory and clinical value. The technic is described in detail, as are the various clinical applications.

For the benefit of those who have not had the previous edition, the work consists of two divisions. The first describes the actual details and technic of the various urine and blood analyses, including a chapter upon the fitting and equipment of the laboratory. The second division takes up the interpretation of the various chemical findings and their relationship to the disease conditions, especially diabetes, nephritis, gout and thyroid disorder.

At the end of each chapter is a very complete bibliography, and the entire book is profusely illustrated. It should be of great value, especially to those engaged in laboratory work and in clinical medicine.

DONALD MCCARTHY, M. D.

THE FUNDAMENTALS OF HUMAN ANATOMY INCLUDING ITS BORDERLAND DISTRICTS FROM THE VIEWPOINT OF A PRACTITIONER. By Marsh Pitzman, A. B., M. D., Professor of Anatomy in the Dental Department of Washington University, St. Louis. Cloth. Price, \$4. Pp. 356, with 101 illustrations. St. Louis: C. V. Mosby Company, 1920.

The author points out that anatomy is now taught to students of medicine by two groups of teachers: those who are essentially anatomists and those who are essentially practitioners. The one group tends to teach anatomy as a pure science, while the other teaches it as an applied science. The author thoroughly appreciates the value of both viewpoints, but keenly feels the need of correlating them.

This book is so written that it enables one to obtain the fundamentals of anatomy in a comparatively short time. It is valuable, not only to the student, but also to the practitioner.

J. A. MYERS, PH. D., M. D.

MEDICAL CLINICS OF NORTH AMERICA. Volume IV, Number I (New York Number, July, 1920). By New York Internists. Octavo of 370 pages with 44 illustrations. Philadelphia and London: 1920. Issued serially, one volume every other month. Paper \$12.00; Cloth \$16.00 net. Consisting of six numbers per clinic year.

Heart and kidney conditions can be said to predominate in the New York number. Dr. Nellis B. Foster heads the list by showing several cases of nephritis, illustrating the different types. Chronic parenchymatous nephritis is classified, discussed, and illustrated in detailed tables by Dr. Albert A. Epstein, who gives several examples of the use of the high protein diet. Members of the metabolism department of the Vanderbilt Clinic give papers on their problems. Mosenthal gives methods and results of the kidney-function test, by the observation of the two hour-urine specimens. Kraus reports on the neurologic signs and symptoms which he finds present in 60 per cent of diabetics. Marks and Boas discuss venous and capillary pressure and the significance of high-blood pressure readings. Boas calls attention to the marked varia-

BOOK NOTICES

THE NEWER METHODS OF BLOOD AND URINE CHEMISTRY.

By R. B. H. Gradwohl, M. D., Director of the Gradwohl Laboratories, Chicago and St. Louis, and A. J. Blaivas. Second edition. Cloth. Price, \$5. Pp. 418,

tion in pressure readings after exercise and rest.

The chemistry of acidosis and the treatment of the clinical condition accompanying it are described by Max Kahn.

Dr. Cary Eggleston outlines the treatment of advanced heart failure in an interesting and practical way. The circulatory disturbances of pregnancy are illustrated by a case seen by W. W. Herrick, and Burrill B. Crohn discusses the gastro-intestinal symptoms associated with coronary sclerosis in which the pain of angina is referred to the abdomen. S. Neuhof shows a group of cases showing auricular fibrillation.

Six cases of a rare disease known as glandular fever are reported by M. B. Rosenbluth. The general symptoms caused by imbalance of the eye muscles are described by W. F. Macklin. S. J. Nilson outlines the diet in eczema. Louis Bauman reports increased urobilin in urine and feces in certain diseases of the liver and of the blood. Favorable results in Type I pneumococcic pneumonia by serum administration are reported by R. L. Cecil. Pulmonary, cardiac, and neurological complications and sequelæ of influenza are rather thoroughly discussed by Harlow Brooks; and H. Wessler gives a number of case-reports of encapsulated pleura effusions, showing röntgen plates of each. S. W. Bandler explains the various psychic phenomena of puberty and of the climacterium on the grounds of instability in the links of the chain of endocrine glands.

OLGA HANSEN, M. D.

REPORTS OF SOCIETIES

PROGRAM OF THE MINNEAPOLIS, ST. PAUL AND SAULT STE. MARIE, RAILWAY SURGICAL ASSOCIATION

Program of the Thirteenth Annual Meeting of the Minneapolis, St. Paul & Sault Ste. Marie Railway Surgical Association, held at the Radisson Hotel, Minneapolis, December 17 and 18, 1920:

OFFICERS FOR 1919-1920

President, Eric P. Quain, Bismarck, N. D.
Vice-President, Ernest V. Smith, Fond du Lac, Wis.
Secretary-Treasurer, John H. Rishmiller, Minneapolis, Minn.

PROGRAM

FIRST DAY—Friday, December 17—Morning Session, 10 A. M.

1. Tetanus and Its Treatment. Dr. Ernest V. Smith, Fond du Lac, Wis. Discussion opened by Dr. Paul F. Brown, Minneapolis.

2. Indefinite Injuries to Feet of Railway Employees. Dr. William F. Sihler, Devils Lake, N. D. Discussion opened by Dr. George Bjorkman, Gladstone, Mich.

3. Diagnosis and Treatment of Fractures of Astragalus and Os Calcis. Dr. Albert J. Pullen, North Fond du Lac, Wis. Discussion opened by Dr. Alfred M. Ridgway, Annandale, Minn.

FIRST DAY—December 17—Afternoon Session, 2 P. M.

4. Penetrating Wounds of the Chest. Dr. Clarence C. Del Marcelle, Neenah, Wis. Discussion opened by Dr. Arthur N. Collins, Duluth.

5. Spinal Analgesia in General Surgery. Dr. George F. Thompson, Chicago. Discussion opened by Dr. Theodor Bratrud, Warren, Minn.

6. Newer Laboratory Methods Applied to Surgery. Dr. Victor A. Mason, Marshfield, Wis. Discussion opened by Dr. Albert J. Hodgson, Waukesha, Wis.

7. Acute Intestinal Obstruction, with Case-Reports. Dr. Leonard C. Weeks, Detroit, Minn. Discussion opened by Dr. Carl von Neupert, Jr., Stevens Point, Wis.

8. Treatment of Fractures of Carpus, Metacarpus, and Phalanges. Dr. J. Arthur Riegel, St. Croix Falls, Wis. Discussion opened by Dr. Axel W. Swedenburg, Thief River Falls, Minn.

9. Influenza and Tuberculosis. Dr. Gilbert Hendrickson, Enderlin, N. D. Discussion opened by Dr. John M. Dodson, Chicago.

BANQUET AT THE HOTEL RADISSON

Friday evening, December 17, 1920, at 6:30 o'clock

10. Address. Dr. Lotus D. Coffman, President, University of Minnesota.

11. President's Address. Dr. Eric P. Quain, Bismarck, N. D.

12. Standardization of Personal Injury Reports. Mr. John E. Palmer, General Attorney, Minneapolis.

13. The Internal Secretions of the Skin. Dr. Karl W. Doege, Marshfield, Wis.

SECOND DAY—Saturday, December 18—Morning Session, 9 A. M.

14. Osteomyelitis. Dr. Otto W. McClusky, Carrington, N. D. Discussion opened by Dr. Herbert B. Crommett, Amery, Wis.

15. Early Active Treatment in Intra-articular Fractures. Dr. Cleve R. Senescall, Vebien, S. D. Discussion opened by Dr. John M. Dodd, Ashland, Wis.

16. Demonstration of Fractures by Lantern Slides. Dr. John H. Rishmiller, Minneapolis.

17. Office Dressings. Dr. Leon C. Combacker, Osceola, Wis. Discussion opened by Dr. Otis H. Epley, New Richmond, Wis.

18. Treatment of Contused and Lacerated Wounds. Dr. George M. Constans, Donnybrook, N. D. Discussion opened by Dr. Alvin C. Tanner, Minneapolis.

19. Subphrenic Abscess. Dr. Lawrence F. Fisher, Thief River Falls, Minn. Discussion opened by Dr. Frederick A. Dunsmoor, Minneapolis.

SECOND DAY—Saturday, December 18—Afternoon Session, 2 P. M.

20. First Aid and Treatment to the Injured. Dr. Fred A. Soles, Spencer, Wis. Discussion opened by Dr. John B. Darling, St. Paul.

21. Arteriosclerosis, a Pathological Review. Dr. Abraham Shedlov, Gully, Minn. Discussion opened by Dr. Adolph O. Aaker, Velva, N. D.

22. Surgical Shock. Dr. Daniel C. O'Connor, Eden Valley, Minn. Discussion opened by Dr. Arthur A. Law, Minneapolis, Minn.

23. Trauma as a Causative Factor in Appendicitis. Dr. Frederick W. Maercklein, Oakes, N. D. Discussion opened by Dr. John V. R. Lyman, Eau Claire, Wis.

Election of officers.

A stereopticon lantern will be at the service of anybody for the demonstration of interesting slides.

NEWS ITEMS

Dr. K. V. Overend has moved from Kennedy to Hallock.

Dr. C. N. Brooks has moved from Clark, S. D., to Hazel, S. D.

Dr. M. O. Oppegaard has moved from Minneapolis to Crookston.

Dr. C. M. Pierson has moved from Ambrose, N. D., to Breckenridge, Minn.

Dr. Walter Halloran, of Jackson, was married last month to Miss Teresa Ryan, of St. Paul.

Dr. Guy Clark, who formerly practiced in Winona, died last month in Eau Claire, Wis., at the age of 41.

Dr. A. B. Kirk, of Chisholm, who was widely reported as dead in California, is not dead, but is in excellent health.

Dr. James A. Cosgriff, who has been house physician in the General Hospital of Minneapolis, has located at Oneida, S. D.

The United States Public Health Service will take charge of the Aberdeen hotel building in St. Paul on February 1, 1921.

Dr. Albert E. Hofer, of Marion, S. D., who was detained in Poland because of war conditions, has been released and will be home soon.

The matter of renting Asbury Hospital to the United States Public Health Service for the care of soldiers is considered in our editorial columns.

Asbury Hospital of Minneapolis is to be leased for a term of five years to the United States Public Health Service for the use of ex-service men.

The Minot (N. D.) Hospital has been caring for over one hundred ex-service men, some of whom have been operated on two and some three times.

Dr. F. U. Davis, of Faribault, was elected president of the Minnesota Sanitation Conference at its annual meeting, held in St. Paul last month.

Dr. Alfred Eugene Spalding, of Luverne, one of the best known physicians and surgeons in Minnesota, died ten days ago of pneumonia, at the age of 69.

Dr. William E. Hambroer, of Eden Valley, died last month at the age of 75. Dr. Hambroer graduated from the Chicago College of Medicine and Surgery in 1883.

After January 1, Dr. J. Frank Corbett, of Minneapolis, will devote his entire time to private practice, his resignation from the staff of the University medical staff taking place.

Dr. John G. Whittemore, of Donnelly, died early this month, of a long illness from cancer. Dr. Whittemore graduated from the University of Minnesota Medical School with the class of 1903.

The Mayo Foundation of the Medical School of the University of Minnesota announces that there will be vacancies in surgery fellowships, beginning July 1, 1921. Applications will be received now.

Dr. W. J. Mayo, of Rochester, and Mr. Louis W. Hill, of St. Paul, have been appointed the Minnesota members of the nationwide committee selected by President Wilson to raise funds for the starving people of China.

The Columbus Hospital, of Great Falls, Mont. has established a staff of twelve physicians and surgeons, and, it is expected, will soon be recognized by the American College of Physicians and Surgeons as a standardized hospital.

Dr. A. M. Aanes, who has been associated with Drs. Cremer, Claydon & McGuigan, of Red Wing, has gone to Norwood, N. D., to take charge of the hospital at that place. This hospital has a capacity of thirty-five beds.

The General (City) and Hopewell Hospitals of Minneapolis admitted 5,512 patients from January 1 to November 1, in 1920, as against 4,825 for a like period (ten months) in 1919. Hopewell cares for the tuberculous cases.

Dr. Lydia Allen De Vilbiss, acting Assistant Surgeon General of the United States Public Health Service, is forming child welfare and infant hygiene organizations in Montana. She has done similar work in Florida and Missouri.

Dr. George B. Irvine, a recent graduate of the University of Illinois, who has been house physician in the Minneapolis General Hospital, was married last month to Miss Claire Flater, of Minneapolis. Dr. Irvine has located at Preston, S. D.

Dr. Anna C. Norris, director of the physical education for women at the University of Minnesota, was elected president of the Minnesota branch of the National Physical Education Association at its annual meeting on Dec. 4, in Minneapolis.

"Doctor vs. Doctor" is the familiar phrase used by a Mankato newspaper to announce that Dr. A. F. Schmitt and Dr. W. A. Beach will be the opposing candidates for mayor of that city. What a small stake to be contested for by two doctors!

The politicians in the Minneapolis City Council who have been attempting to prevent the re-appointment of Dr. F. E. Harrington as city physician and Dr. Mabel Ulrich as a member of the Board of Public Welfare, have met a storm of indignation from the citizens of Minneapolis that cannot be pleasing.

The Hennepin County Medical Society is endeavoring to complete the history of the Society by seeking information from present members, sending out suitable blanks for that purpose. Why should every society not complete its records in the same way before it is *everlastingly* too late?

"Bids wanted," "bids received," "bids opened," and "bids accepted," or "bids rejected" are prominent in the headlines of the Montana newspapers at this time of year when the respective counties of the state are seeking cheap—the cheapest—medical services for the "sick, poor and infirm" of the respective counties.

At the annual meeting of the Southwestern Medical Society, held last month in Worthington, the following were elected officers for 1921: President, Dr. F. G. Watson, Worthington; Vice-President, Dr. F. M. Metcalf, Fulda; Secretary and Treasurer, Dr. E. G. McKeown, Pipestone. The next meeting will be held at Fulda on May 1.

The United States Civil Service Commission pays a röntgenologist \$200 to \$250 a month, with some perquisites, besides an assistant and an associate. The requirements of the first-named is a man worth about \$350 or \$400 a month, and of the others, men capable of earning in private practice about double the salaries offered.

It is indeed rare that a public servant receives so varied and so hearty an approval as that given Dr. Mabel Ulrich in Minneapolis when the time came for her reappointment on the Board of Public Welfare. The whole city seemed to realize that she has been a useful, even an indispensable member of that Board. High tribute

was paid to her by a score of organizations, including the Hennepin County Medical Society.

At the annual meeting of the Western Surgical Association, held last week in Pasadena, Calif., over which Dr. A. T. Mann, of Minneapolis, presided as president, Dr. Harry P. Ritchie, of St. Paul, was elected vice-president, and Dr. Warren A. Dennis, of St. Paul, was re-elected secretary. Dr. Mann becomes a member of the Executive Committee for 1921.

Only about one-third of the physicians of Minnesota have taken out permits to write prescriptions containing intoxicating liquor. Nearly six hundred have taken out a single book each, and, at the other extreme, one has taken out eight and one seven books. A book contains one hundred prescriptions. About 1,400 books, or 140,000 prescription blanks, have been issued, but all have not been used.

The annual meeting of the Southern Minnesota Medical Association, held the last two days of November, at Mankato, was a memorable event, and is commented upon in our editorial columns. The following officers were elected for 1921: President, Dr. J. W. McCarthy, Madelia; first vice-president, Dr. E. D. Keyes, Winona; second vice-president, Dr. W. R. Ramsey, St. Paul; secretary, Dr. H. G. McGuigan, Red Wing, treasurer, Dr. G. F. Merritt, St. Peter.

The opening of the Miller Memorial Hospital of St. Paul last month was an event of great interest to the public and the medical profession. The hospital building was designed by an architect of distinction, Mr. Clarence Johnson, and the hospital planning and equipment were in the hands of Dr. L. B. Baldwin, the superintendent of both the Miller Memorial and the University Hospitals, assisted by the able staff of the new hospital. The result is a hospital of 216-bed capacity of well-nigh perfection in every detail. We heartily congratulate the people of St. Paul and the staff of this new hospital on the fact that a generous citizen made this building possible.

POSITION AS LOCUM TENENS WANTED

A middle-aged physician is at liberty to do substitute work for from one to four months in city or country. Can do all general work and can give the best of references. Address 423, care of this office.

PHYSICIAN WANTED

In a Minnesota village of 500, thirty miles from the Twin Cities; nearest competition twelve miles. Four other towns are within the territory that do not have a doctor. Good roads and good collections. Scandinavian locality. Address 421, care of this office.

SPLENDID OPENING FOR A PHYSICIAN

A Minnesota village of 1,000 inhabitants wants a young or middle-aged physician to locate there. It is a comparatively new country, but is a territory of great fertility. The village has a splendid new school building, water-works, electric lights, bank, two garages, good stores, etc. The woodenware factory employs 220 hands, and as many more work in the woods nearby; and the company will give a new physician its undivided support. Address 426, care of this office.

LOCUM TENENS WANTED

To take charge of my practice for two months, beginning between Dec. 27 and Jan. 1. Practice in town of 500 in North Dakota. State salary and terms in first letter. Address 425, care of this office.

POSITION WANTED

Position on salary or as locum tenens, with or without view to purchase practice. Am licensed in three states, and have done postgraduate work in Tulane and Chicago Polyclinic. Good general surgeon and in general practice. Best of references. Address 426, care of this office.

**WAGNER MICA PLATE STATIC MACHINE
FOR SALE**

I used this machine in small country village for x-ray where there was no electric current. It is also fine for electric treatments where there are no other currents. Will pay for itself in one year if used. Have no use for it now that I have moved to city. Will sell dirt cheap. Address 416, care of this office.

**POSITION WANTED BY X-RAY TECHNICIAN
AND NURSE**

A registered nurse and X-ray technician desires a position on January 1st. Has had three years' experience in a surgeon's office. Address 419, care of this office.

FOR SALE

One nearly new Spencer microscope No. 25 H., in perfect condition. List price \$132.00; first check for \$95.00 takes it and mahogany case.

One specialist's chair, upholstered in leather, (made by American Metal Furniture Co., Indianapolis, Ind. No. 513.). Still in original crate; never used. List price, \$110.00; first check for \$85.00 takes it F. O. B.

One stool to go with specialist's chair. List price, \$14.00, by same manufacturers. Price, \$10.00. Never used and in original container. F. O. B.

Address 418, care of this office.

OFFICE POSITION WANTED

A young woman of good address who will give faithful service, wants a permanent position in a physician's or dentist's office at a moderate salary. Can keep books and can use the typewriter fairly well. Address 417, care of this office.

PRACTICE FOR SALE

Cash income last two years averaged over \$5,000 a year. Railroad contract transferable. Division point on C. M. & St. P. R. R. Price, \$2,500 for equity in real estate. Write G. J. Warnshuis, M. D., Marmarth, N. D.

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Advantages:

1-Will not deteriorate. 2-Free from autolytic products. 3-In preliminary trials has not produced toxic reactions even in large doses

The types of cases reported to us as favorably influenced by Gonococcus Glycerol-Vaccine are chronic gonorrheal infections, including gonorrheal rheumatism, epididymitis, prostatitis and posterior urethritis.

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511 FIFTH AVENUE NEW YORK

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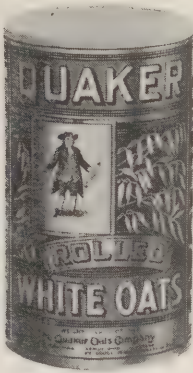
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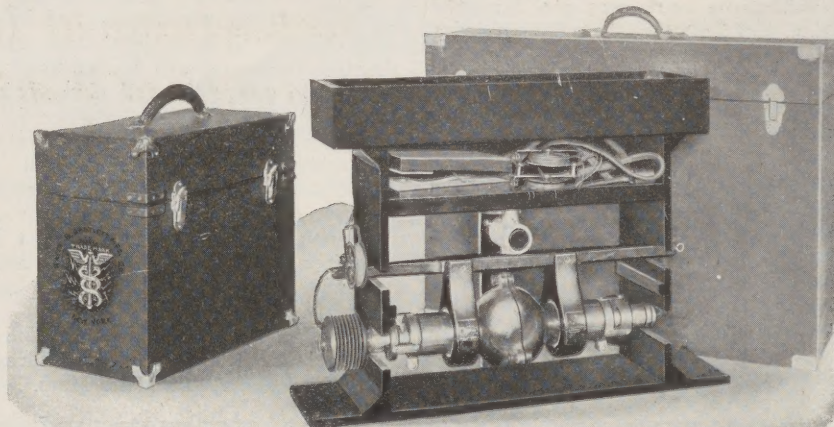
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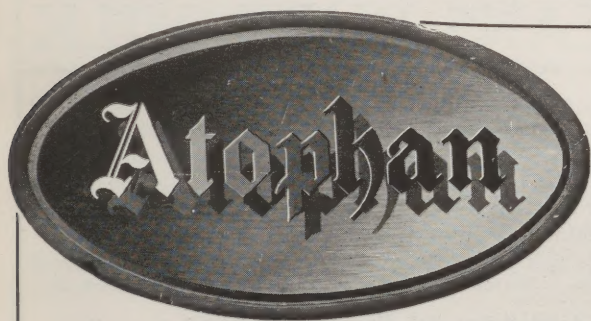
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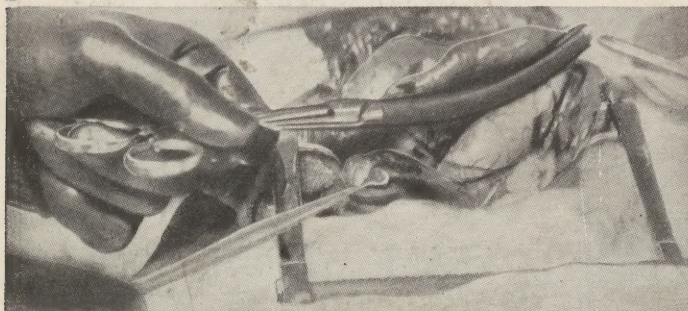
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

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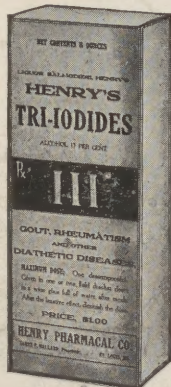
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